

**7** HOW-TO-DO-IT  
MODELING FEATURES!

ICD 08285

# FineScale MODELER

JULY/AUGUST 1985 / \$2.50

Scratchbuilding the PC-6 Pilatus Turbo-Porter in 1/25 scale



- Modeling the Streak Eagle in shades of silver and gold
- Making tin cans for dioramas
- A sporty 1953 Chevy Bel Air in 1/25 scale
- Airborne, all the way — a 90 mm paratrooper conversion
- Modeling a long-nose F11F-1 Tiger



Modeling a 7.5 cm PaK 40 auf RS0 antitank weapon



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## ON THE COVER

It would be hard to find two subjects more different than those on this issue's cover. Ron Lowry's scratchbuilt 1/25 scale Pilatus Turbo-Porter is a sleek, modern, high-tech civilian aircraft designed from the ground up for its mission. Very much the other side of the coin, Terry Sunday's 1/35 scale PaK 40 RSO conversion portrays a hybrid vehicle that was itself a conversion — an expedient developed in a hurry for an unforeseen military situation. But one thing these models have in common is fine craftsmanship, and you can read more about that aspect of both of them beginning on pages 20 and 28.



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# FineScale MODELER

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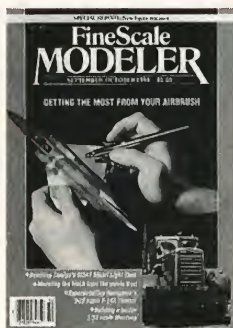
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# Discover challenging modelbuilding projects — and useful scale modeling tips — in these FSM back issues!



## WINTER 1982

- 1/35 Soviet T-60 tank
- Acrylic display cases
- Race car cockpits
- Mountain man figure
- Build your first diorama
- Spitfire Mk. IA P9306 data

## SPRING 1983

- 4' x 8' 1/35 diorama
- 1/72 B-29 Superfortress
- Camouflage netting
- Modeling four Tigercats
- StarClipper spacecraft
- Realistic lights/lenses

## SUMMER 1983

- The perfect filler putty
- 1/35 Panzer IV Ausf. B
- Attack lizard!
- 1/18 museum diorama
- Aerodyne cab-over
- 1/72 Boeing B-50

## FALL 1983

- M48A3 moving pillbox
- Testors F-4E Phantom II
- Aircraft cockpit details
- 1/25 scratchbuilt truck
- Superdetailing armor
- Solve casting problems

## JAN/FEB 1984

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- Dealing with decals
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## MAY/JUNE 1984

- 1/32 scale Fw 190D-9
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- Modeling "Murat in Egypt"
- Scratchbuilding 1/12 motorcycles
- Modeling smoke and fire
- Introducing FSM Clinic

## JUL/AUG 1984

- Build the Goodyear blimp
- 1/35 M1 57 mm antitank gun conversion
- Model 201 Super Guppy
- Color schemes of RAAF "Magpies"
- Creating jungle foliage
- 1/18 Polish Winged Hussar

## SEPT/OCT 1984

- 1/25 Kenworth truck
- Building a 1/32 Mustang
- Basics of airbrushing
- 1/25 truck from movie Duel
- Detailing 1/72 F-14A Tomcat
- Improving M5A1 Stuart Light Tank

## NOV/DEC 1984

- Casting resin parts
- Computer scale converter
- Building first epoxy resin car kit
- Basic bases
- Modeling Soyuz spacecraft
- Creating metal model aircraft

## MAR/APR 1985

- Painting faces on figures
- Easy underwing details
- Modeling Lindbergh's Lockheed
- Building a 1/25 scale diorama
- Creating 1/32 scale P-38
- Jumbo assault Sherman M4A3E2

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## FSM UPDATE

FSM invites manufacturers and publishers to submit news releases, photos, product samples, and new catalogs. A description of our new-product announcement and review policies is available from FSM Update, FINESCALE MODELER, 1027 North Seventh Street, Milwaukee, WI 53233.

**Kit releases.** A recent release from Airways Vac Form, 3 Calton Road, New Barnet, Herts. EN5 1BY, England, is a 1/48 vacuum-formed HS Buccaneer S2/B, £9.95 (approximately \$13.00). Airmail postage to the U. S. for one kit is £4.65 (approximately \$6.00); ask Airways about postage charges before ordering more than one kit.

Falcon Industries, P. O. Box 10-213, Wellington, New Zealand, has introduced the 1/72 vacuum-formed Triple Conversion Kit IV. From the Triple Conversion Kit IV and the appropriate Hasegawa kit you can make a Grumman E-1B Tracer, Lockheed AP-2H Neptune, or Grumman F9F-8P Cougar.

Two new kits from Heller, 24, rue de Paradis, 75010 Paris, France, are No. 315, 1/72 Douglas DC-6B Super-Cloudmaster, and 751, 1/16 Citroën DS19.

A 1/48 Lockheed P-38 vacuum-formed conversion kit is now available from Koster Aero Enterprises, 233 East Ellis Avenue, Libertyville, IL 60048. It is product No. 6 and sells for \$6.95 postpaid. With this kit you can convert Monogram's P-38L into a P-38E, F, G, F-5A, and F-5E. Also included are "pathfinder" and "droop snoot" noses, early cockpit details, rear cockpit details for the P-38M, main gear well details, and decals for seven aircraft.

New from KPL Models, 703 Cannon Road, Silver Spring, MD 20904, is a 1/72 vacuum-formed CA-11 Woomera Australian torpedo bomber which includes some parts for conversion to the earlier CA-4 configuration. The kit sells for \$7.95. Add \$1.50 for postage in the U. S.; modelers living outside the U. S. should write for postage rates.

Monogram Models, Inc., 8601 Waukegan Road, Morton Grove, IL 60053-2295, has released several new kits, including No. 2422,



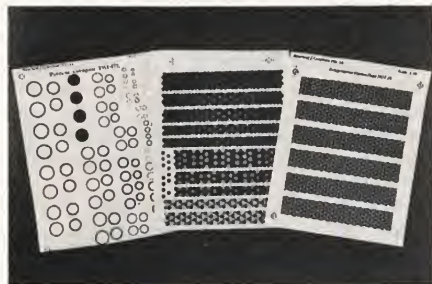
"Devastator" 6 x 6 monster truck, and 2423, "Intimidator" 6 x 6 monster truck, both 1/32. New 1/24 releases are 2702, ZZ Top "Eliminator" Ford coupe; 2703, Boot Hill Express show rod; 2704, Red Baron show rod; and 2705, L'il Coffin show rod.

Twelve 1/20 Nitto SF 3D kits of vehicles and armored one-man fighting suits from World War Four are available from Twentieth Century Imports, 4732 East Pearl, Boulder, CO 80303. The kits are No. 1, Armored



Fighting Suit (AFS) Mk. 2, \$8.50; 2, Panzer Kampf Anzug (PKA) H. O. (an AFS), \$8.50; 3, AFS Mk. 1, \$8.50; 4, Super AFS, \$9.50; 5, Gustav (a PKA Ausf G), \$9.50; 6, PK-41 "Hornisse" Scout Flyer and PKA-H, \$34.00; 7, Fireball (AFS outfitted for space), \$9.50; 8, Raccoon (scout-type AFS), \$9.50; 10, Heavy AFS Jerry (two-leg tank), \$25.00; 11, PK-40 Jagd Flugzeug "Fledermaus" (light fighter craft), \$30.00; and 12, NS465 Drone Scout "Neuspotter" (flying scout), \$15.00. Send \$2.00 for Twentieth Century's complete catalog.

Wings 72 & Wings 48, Inc., 3349 Wildridge Drive, N. E., Grand Rapids, MI 49505, is selling three new vacuum-formed kits: No. VW4811, 1/48 Yakovlev Yak-36 Forger; VW7230, 1/72 Lockheed F-90; and VW7237, 1/72 Vought TBU-1/Consolidated TBV-2 Sea Wolf.



**Decals.** Americal/Gryphon Decals, 4373 Varsity Lane, Houston, TX 77004, has released three new decal sheets for WWI aircraft. Sheet No. 11 contains 1/72 Russian cockades ranging from 4 mm to 24 mm in

diameter. Austro Hungarian Army Air Service lozenge camouflage in 1/72 is featured on sheet 13, while sheet 14 has 1/48 Kriegsmarine lozenge camouflage.

Available from IPMS/Spruce Goose, 929 Jasmine Circle, Costa Mesa, CA 92626, is Histori-Cals decal sheet No. 3, WWII German swastikas in black and white. The decals will fit models from 1/144 to 1/32 and include most of the configurations used during the 1930s and 1940s. Each sheet sells for \$4.50 postpaid.

The latest 1/72 Microscale decals from Krasel Industries, Inc., 919 Sunset Drive, Costa Mesa, CA 92627, include sheet No. 72-472 with markings for three colorful CF-101B Voodoos. Sheet 72-473 has markings for MiG-21s from Czechoslovakia, East Germany, Egypt, Finland, India, Russia, and Vietnam. Two U. S. Navy and U. S. Marines C-118s are featured on sheet 72-474. AP-2H, AC-47, AC-119G, and AC-130A gunships are the subjects of sheet 72-475. Sheet 72-476 features sharkmouth B-24s, while 72-477 has A-1 Skyraiders of VA-25 and VA-196, USAF and VNAF. Sheet 72-478 has two sizes of U. S. Naval Air Station names, and 72-479 has four new styles of black low-visibility U. S. insignias.

In 1/48, Krasel has released sheet No. 48-247 with markings for AV-8A Harriers from VMA-231, VMA-513, and VMA-542. Sheet 48-248 features British Harriers of No. 1 and No. 4 Squadrons of the Royal Air Force and a Sea Harrier of No. 700A Squadron. F-4 Phantom IIs of the Minnesota and Louisiana Air Guards are the subjects of sheet 48-249, and Bicentennial F-111s are on 48-250. Sheet 48-251 includes markings for three

AC-47 gunships and one AC-130 gunship. Czech, East German, Egyptian, Finnish, Indian, and Russian MiG-21s make up sheet 48-252. More Phantoms of Alabama, California, and Louisiana Air Guards are featured on sheet 48-253, while low-visibility U. S. insignias are the subjects of 48-254.

**Paints and adhesives.** Robart, 310 North 5th Street, St. Charles, IL 60174, has introduced its Color Coat epoxy spray paint line. Eleven colors are available in 12-ounce cans; each retails for \$5.98.

**Figures.** New from Bombardier Models, 23 Whitehill, Bradford on Avon, Wiltshire BA15 1SQ, England, is stock No. BV10, a foot figure from the 2nd/19th County of London, The London Regt. (Jerusalem), 1917. This 54 mm metal figure sells for £3.00 (approximately \$4.00) plus 30 percent for overseas shipping and handling.

**Accessories and diorama materials.** Stevens International, P. O. Box 126, Magnolia, NJ 08049, imports Noch lake material, No. 6085. A section 42 x 27 cm retails for \$5.00; add \$2.00 for postage when ordering directly from Stevens.

Volant Plastics, P. O. Box 443, New Cumberland, PA 17070, produces gloss brass or satin silver nameplates engraved with block letters. Sizes available are 3/4" x 3" and 1/2" x 2".

**Tools.** Eberhard Faber Inc., Crestwood, Wilkes Barre, PA 18773, offers the Designaire, a portable marker spray system. According to Eberhard Faber, you can



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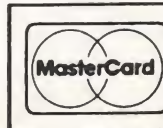
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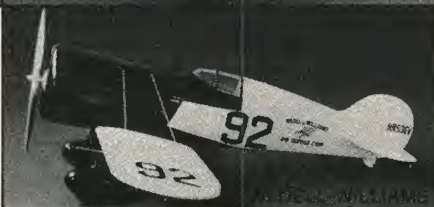
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achieve airbrush effects with Design art markers. The spray kit comes with one color marker, can of propellant, and a hose and nozzle unit; it is available for \$32.00 at art supply stores.

Foredom Electric Company, Bethel, CT 06801, has introduced the Model S miniature power tool system with variable speeds up to 14,000 rpm. Power is provided by a ⅛ hp motor. This power tool system retails for \$194.00.

Available from GraphiCraft, P. O. Box 509, Westport, CT 06880, is the Permanently-Set Pantograph for reducing or enlarging images. It sells for \$10.95 at art and craft supply stores; add \$1.55 for postage if ordering directly from GraphiCraft.

Mascot Precision Tools, 750 Washington Avenue, Carlstadt, NJ 07072, has introduced seven general-purpose hobby pliers and cutters: No. H350, flat nose with smooth jaws, 5" long; H351, needle nose with serrated jaws, 4¾" long; H352, round nose with smooth round jaws, 4¾" long; H353, diagonal cutter, 4½" long; H354, end nipper, 4¼" long; H355, midjet lineman pliers with built-in side cutter, 4½" long; and H356, long nose with serrated jaws bent to 60-degree angle, 5½" long.

Microflame, Inc., 3724 Oregon Avenue South, Minneapolis, MN 55426, now offers its miniature gas torch in a plastic storage and carrying case. Called the deluxe hardware torch kit, No. 4400, it includes the torch, gas cylinders, flame tips, spark lighter, brazing rods, and flux. The kit retails for \$49.95; add \$1.50 for postage if ordering from Microflame.

New in the Acu-Min line of miniature hand tools from Moody Tools Inc., 42-60 Crompton Avenue, P. O. Box 230, East Greenwich, RI 02818, is a 10-piece metric socket wrench/nut driver set. It contains five blades—sizes 2 mm, 2.5 mm, 3 mm, 3.5 mm, and 4 mm. The metric sockets are made of hardened plated steel and are fully assembled with five solid-locking, chuck-type, knurled, plated steel handles with Swivertops. The set, No. 58-0165, comes in a vinyl storage pouch and sells for \$14.95.

SMMI Products, 4231 112th Terrace North, Clearwater, FL 33520, has introduced the Flexible Illuminator, a flexible, high-intensity, battery-powered light. The list price ranges from \$17.99 for the light alone to \$32.99 for a deluxe kit. Also available is the Mini-Illuminator, which SMMI states "has many of the features of the Flexible Illuminator in a smaller, less expensive package"; list prices range from \$6.98 to \$9.98.

**Catalogs.** Aero Publishers, Inc., 329 West Aviation Road, Fallbrook, CA 92028, has released its 32-page spring 1985 book catalog.

To receive catalogs listing wargaming figures plus a painted sample, or a collector's (larger scale) catalog and a color photograph, send \$2.00 to Artistic Enterprises, 9 Winston Crescent, Whitby, ON, Canada LIN 6Y3. This firm now stocks the entire range of Garrison 25 mm wargaming figures and is the sole Canadian agent for Jacobite 15 mm wargaming figures.

The 1985-86 catalog from Carswell's Creations, 3476 Alward Road, Pataskala, OH 43062, sells for \$1.50. It lists items for auto enthusiasts, including buttons, bumper stickers, rubber stamps, and embossed aluminum logo plates.



A catalog listing half-hull ship models is available for \$1.00 from Model Ship Marina, P. O. Box 15201, Alexandria, VA 22309.

**Miscellaneous.** John Andrews has announced the formation of the Golden Eagle Society for serious plastic kit builders, historians, and kit collectors; membership is by invitation only. Andrews states that the main function of the Golden Eagle Society "is communicating the values of the scale model building hobby — an educational function — and placing the very best builders, historians, and collectors in communication with each other." The society also plans to produce two scale model kits annually, beginning in 1986. Information is available from John Andrews at 8180 Santa Armenta, San Diego, CA 92126.

New Prince August molds available from The Dunkin Company, P. O. Box 717, Calvert, TX 77837, include a catapult and orc catapult crew, as well as two medieval molds with Marsion knights, one of which is mounted.

Idea 3, Via Romolo Gessi, n.12, 10136 Torino, Italy, has introduced five new 1/43 die-cast model cars: No. 103E, 1961 Ferrari 250 SWB Scaglietti "Tour de France"; 103G, 1961 Ferrari 250 SWB Scaglietti "Le Mans"; 108, 1961 Ferrari 250 SWB Spider California; 111, 1960 Ferrari 250 California "Le Mans"; and 112, 1960 Ferrari 250 SWB Spider California. The models include photo-etched parts and wheels 10 mm in diameter.

Public access to the U. S. Air Force Museum's Research Center, Wright-Patterson Air Force Base, OH 45433, is by appointment only, effective January 1985. Appointments may be made in writing, or by calling (513) 255-4644; the center is open from 9 a.m. until 4 p.m. weekdays, except federal holidays. In addition, all requests to the Research Center for data should be in writing.

*Wind-Sock*, 10 Long View, Chiltern Park, Berkhamsted, Hertfordshire HP4 1BY, England, is a new quarterly newsletter for WWI scale modelers. It is compiled, written, and published by Ray Rimell. A one-year subscription (four issues) for U. S. residents is \$12.75, or \$16.75 airmail; make checks or postal orders payable to Albatros Productions, Ltd.

**Industry news.** S-G-Simulations, Inc., 2071 Range Road, Clearwater, FL 33575, has been appointed the exclusive U. S. distributor of Hinchcliffe Miniatures. The line includes more than 2000 figures in 25 mm, 54 mm, and larger scales. Send a stamped, self-addressed envelope for a list of figures.

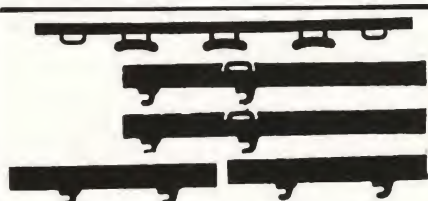
**Coming events.** The 44th annual exhibit and competition sponsored by the Miniature Figure Collectors of America will be held June 1 at Schwartz Field House, Widener University, Chester, Pennsylvania; this is south of Philadelphia on I-95. Write to A. W. Etchells, 315 South 6th Street, Philadelphia, PA 19106, for details.

The Hoosier Model Car Association is presenting its fifth annual miniature vehicle collectors swap meet and model car contest June 2 at 431 South Shortridge Road, Indianapolis, Indiana, beginning at 9 a.m. For additional information contact Dave Williams, 5925 North Rosslyn, Indianapolis, IN 46220, (317) 257-2832.

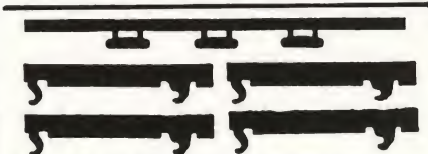
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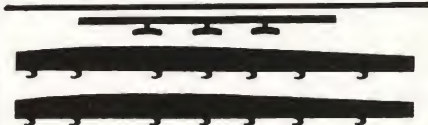
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F-15E Strike Eagle, 1/32 Scale



F-4E Phantom II, 1/32 Scale



F-14A Tomcat, 1/48 Scale

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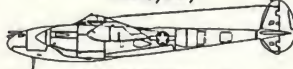




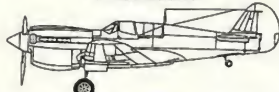
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the Mid-America Fire Apparatus Modelers and Collectors Association will be held June 20 at the Hilton Coliseum, Iowa State University, Ames, Iowa. Scale models will be displayed, as will full-size modern fire apparatus and equipment.

The Indianapolis Adam's Mark Hotel will be the site of the 1985 IPMS national convention, July 18-21. For more information write to IPMS Indianapolis, 1985 National Convention, P. O. Box 88295, Indianapolis, IN 46208.

The Military Modeler's Club of Louisville/IPMS will sponsor the 1985 Louisville Invitational model contest August 3 from 10 a.m. until 6 p.m. at the Holiday Inn, Dixie Highway at I-264, Louisville, Kentucky. Write to 70 Churchill Park, Louisville, KY 40220, for details.

Hobby Expo '85, hosted by the St. Louis Hobby Association, will be held August 25 at the North County Recreation Complex, 2577 Redman Road, St. Louis, Missouri, from 9:30 until 4:00. Admission is \$2.00 and there is a \$1.00 per model entry fee for the model contest. For details send a large, self-addressed, stamped envelope to the St. Louis Hobby Association, P. O. Box 4032, Jennings, MO 63136.

The second annual South Florida Scale Modeling Convention will be held September 13-15 at the Holiday Inn, Calder, Florida. It is sponsored by IPMS Flight 19 in association with the IPMS Lauderdale Scale Modelers. More information is available from IPMS Flight 19, Box 4988, Hollywood, FL 33083.

Willow Grove Naval Air Station will sponsor its third annual scale model show September 27-29 at the Oxford Valley Mall, Langhorne, Pennsylvania. For information, send a stamped, self-addressed envelope to Rick Brown, Code 34C Training, NAS Willow Grove, PA 19090.

The Chicago Model & Hobby Show will be held October 3-6 at the Arlington Park Racetrack near O'Hare airport. Although the show is sponsored by the Radio Control Hobby Trade Association, static models will be displayed.

**FSM Sweepstakes winners.** Drawings for the FSM Sweepstakes (see the November/December 1984 and January/February 1985 issues) were conducted on January 16 and March 21, 1985. The lucky winners are as follows: Grand prize (a modeler's complete workshop): James Grimsley, Rochester, New York. First prizes (airbrushing outfits): Kurt Riechers, Elgin, Illinois; and James Trahan, Calgary, Alberta, Canada. Second prizes (10 Kalmbach scale modeling books): Garard Bottini, Tampa, Florida; Jim Bright, Grande Prairie, Alberta, Canada; John Carvelas, Falls Church, Virginia; Charles Kay, Beloit, Wisconsin; D. I. Reeves, Lafayette, Indiana; and SSgt. Guy Robinson, APO San Francisco, California. Third prizes (5-year subscriptions to FSM): Jim Box, Canyon Country, California; James Garriss, Sandia Park, New Mexico; Eric Hentriksson, Arlington Heights, Illinois; Harry Jones, Wheeling, West Virginia; Don Klesick, Savannah, Georgia; Tom Lang, Fort Lewis, Washington; George Lindley, Duncan, Oklahoma; Kenneth Manjarrez, Bloomington, Illinois; Joe Sargent, Huntington Beach, California; and Larry Yambhiro, Cleveland, Ohio.

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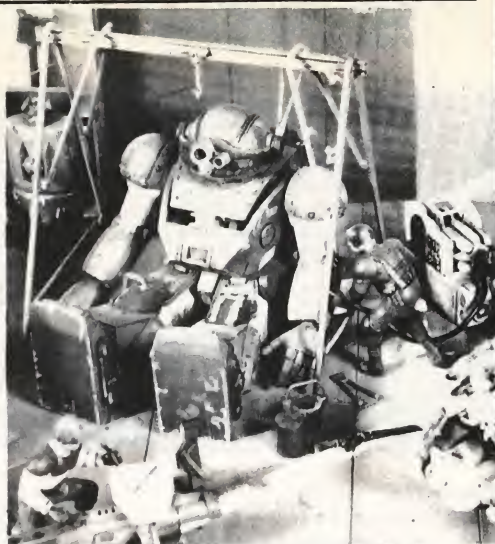
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Every FSM Workbench Review is a first-hand report by a modeler who has actually built the kit or used the product. While our reviewers are encouraged to compare the products to similar ones in their experience, evaluation is of secondary importance; the reviewer's primary goal is to provide a detailed description of the product so FSM readers can evaluate it for themselves. Models shown in Workbench Reviews are built straight from the box.

**Kit:** No. 7305, U. S. S. *New Jersey*

**Scale:** 1/350

**Manufacturer:** MRC-Tamiya, Model Rectifier Corporation, Edison, NJ 08817

**Price:** \$55.98.

"WHICH ONE IS the *New Jersey*?" was a question I had to answer more than once at a model show in a local shopping mall last year. There wasn't a large-scale model of the modernized battleship in the selection of

warship models on display, but MRC-Tamiya has now filled that gap. The *New Jersey*'s operations off the coast of Lebanon have restored interest in modeling the dreadnoughts.

This well-engineered kit is intricately detailed. The 406 gray styrene parts have both raised and recessed details, and the decals provide all the markings necessary. MRC-Tamiya did a good job of planning the fit and assembly—modern warship models of this size usually have gaps between sections of the main deck. This kit's deck comes in three pieces, but the joints are situated at the least noticeable locations and the sections go together with practically no filling, helping to maintain the deck plank detail. Some of the more impressive moldings are the well-proportioned 5" guns, Vulcan/Phalanx weapons, SH-60 Seahawk helicopters, and antenna arrays. No railings are provided, avoiding the usual out-of-scale appearance of many ship kit rails. Advanced modelers can add photoetched or stretched sprue rails.

This kit commands plenty of patience, cement, and paint, but a minimum of filler. The instructions are easy to follow and informative; any potentially confusing points have multiple-view drawings to facilitate understanding. The model went together without any problems, but I had trouble with the decals. The markings for the helicopter landing pad came in five parts and it was a little frustrating trying to get all of them to line up properly. Although the stand looks nice, it seems a bit flimsy to hold such a large model.

The completed model is 30½" long with a 3¾" beam, scaling close to the dimensions in the October 1984 issue of *Strategy & Defense*. Color photos in this magazine, as well as those in the March 1984 issue of *Life*, are excellent references.

Despite the large number of parts and subassemblies, a moderately experienced modeler could expect to finish this model in the 40 hours it took me to do mine. The MRC-Tamiya *New Jersey* is impressive and I highly recommend it. *Jerry Sinkovec*

**Kit:** Avro CF-105 Arrow

**Scale:** 1/72

**Manufacturer:** VP Canada, Victoria Products, 930 Foul Bay Road, Victoria, BC, Canada V8S 4H8

**Price:** \$12.95.

AVRO CANADA'S CF-105 remains one of aviation history's great "what ifs." Only six of the mach 2 long-range interceptors were built before the project was canceled in February 1959. Victoria Products' excellently detailed vacuum-formed replica fully captures the original machine's futuristic grace.

The kit contains 37 parts on five .030" white styrene sheets and a clearly molded, two-piece butyrate canopy. The two-page instructions contain 1/72 scale drawings and feature welcome details of the aircraft's complicated landing gear and cockpit. However, the text of the instructions is sparse and must be carefully compared to the construction sketches during assembly.

All parts feature crisp, recessed panel lines. Outline, scale accuracy, and fit are excellent, too. No decals are provided, but Victoria Products recommends a sheet produced by Astra (Arrow Graphics, R. R. 1, York, ON, Canada N0A 1R0, \$4.95).

The engineering of the seven-piece wing



Eden Harris

and main fuselage assembly is complicated, so be careful when you cut the pieces out and sand them down. To achieve correct fuselage depth, for instance, the instructions recommend periodically dry-fitting the nose

and tail sections to the main fuselage before final gluing. I didn't, and had to sacrifice scale accuracy by shortening the tail pipes for proper fit.

The .030" plastic was too thin for such a



large model, so I reinforced all the major components with balsa strip and 5-minute epoxy. I made the landing gear struts from aluminum tubing, wire, and sheet styrene. Astra's excellent decals worked well with Microscale's decal system.

The finished model is big for a fighter in this scale — just over a foot long with an

8 3/8" wingspan. The kit scales well with the information on the instruction sheet. An excellent reference source on the aircraft is *Auro Arrow* from Boston Mills Press. I spent 25 hours on the model, about average for me on a kit of this complexity. I recommend it to experienced vacuum-form modelers.

David L. Veres



**Kit:** No. 5436, OA-4M Skyhawk

**Scale:** 1/48

**Manufacturer:** Monogram Models Inc., Morton Grove, IL 60053-2295

**Price:** \$5.50.

THE A-4 SKYHAWK, in many versions, has provided 30 years of outstanding service as a light attack aircraft. The OA-4M is a converted TA-4F with added high-technology electronic surveillance equipment to enable it to perform as a "fast fac" (forward air control) as well as an attack aircraft. Its characteristic avionics hump aft of the cockpit and the ECM fairing atop the vertical stabilizer set it apart from other two-seat versions.

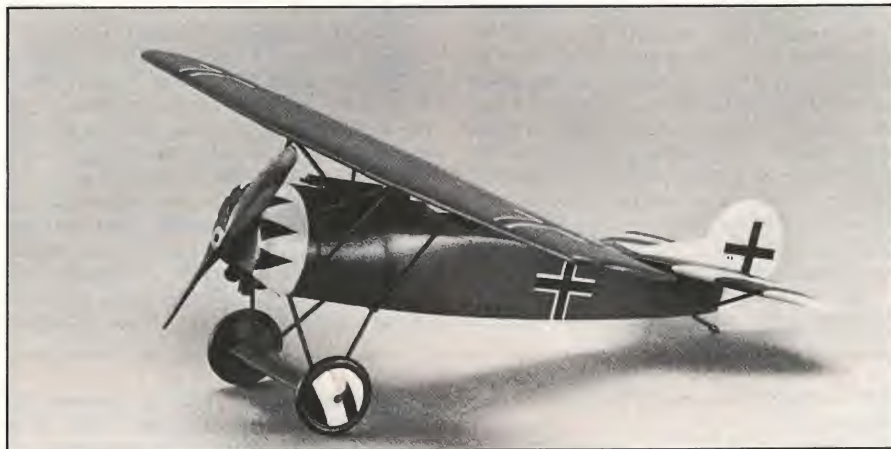
The kit contains 90 dark gray styrene parts featuring accurate, finely raised detail. There were no mold or sink marks. The three-color decal has markings of Marine Headquarters and Maintenance Squadron 12, the "Outlaws," based at the Marine Corps Air Station in Iwakuni, Japan. The instruction sheet is illustrated with three-

view drawings showing Federal Standard color information and decal placement.

Assembly went well; the only problems I encountered were a slight misalignment of the two halves of the ECM fairing on the vertical stabilizer and a slightly oversized rear seat that had to be shaved down to allow the fuselage halves to fit. Overall fit of the kit impressed me most — I used little filler. Although the decals went on well, they were prone to silvering and were out of register.

I was impressed by the overall shape and look of the aircraft — the angular shapes and avionics hump, along with the gray-on-gray color scheme, produce an efficient, up-to-date look. The finished model compares well with the information in Bill Gunston's *The World's Military Aircraft*. I spent 10 hours on my model, less than usual due to the simple paint scheme. Anyone who has built a few kits would have no problem with this one. This Monogram kit is one of the best and most interesting A-4 kits available.

Alan McGivern



**Kit:** No. 1, Fokker D. VIII

**Scale:** 1/72

**Manufacturer:** C. A. Atkins, 17 Ashbourne Avenue, Bridlington, North Humberside YO16 4PE, United Kingdom

**Price:** £8.00 including surface shipping (about \$10.00).

WHITE METAL has long been the preferred medium for figure manufacturers and now is appearing in aircraft accessories and kits. C. A. Atkins' first kit of the Fokker D. VIII "Razor" parasol pursuit will raise eyebrows among plastic model makers.

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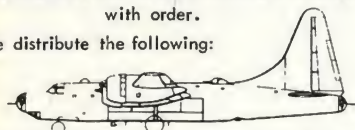
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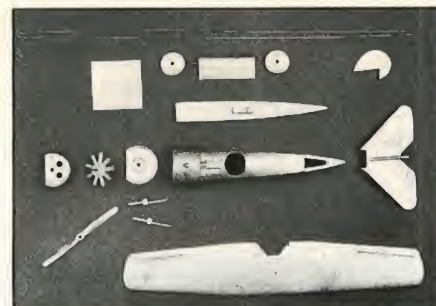
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ing, comparable to injection-molded plastic kits. The fuselage is molded in two parts: The bottom has a molded-in seat brace, and the top with sides includes an instrument panel, and tiny indentations for locating the struts. The horizontal stabilizer and vertical fin assembly is a one-piece molding that fits onto the fuselage. The cowl and separate fire wall sandwich a nicely detailed rotary engine. A shaft running through the center of the engine rests in a hole in the fire wall and projects through the cowl to attach to the propeller. Also included in the kit are .020" brass wire for struts and a small sheet of metal to make the seat. The fuselage-mounted machine guns are basic and there are no decals.

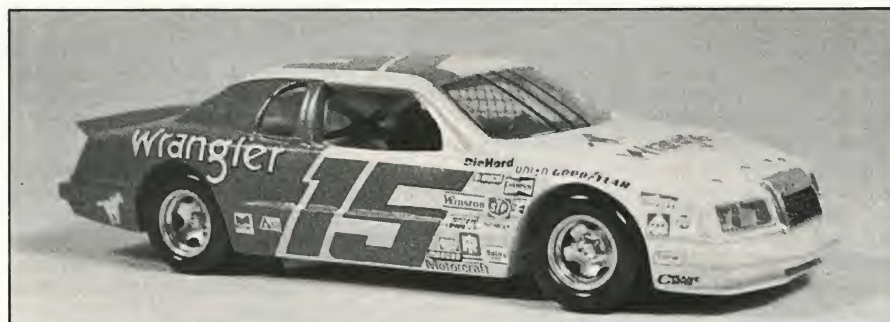
The instruction sheet is poorly reproduced but provides enough information to build the kit. Mold seam lines are easily eliminated with a file. I assembled the model with super glue. The instructions give measurements for the struts, but I modified these. I was concerned that simply attaching the struts to the indicated locations may not be strong enough to support the heavy pieces, so I cut the struts a little longer and drilled holes in the at-



tachment points on the fuselage and wing. Then I bent the ends of each strut and inserted them into the holes.

I painted the model with Testor flats over Floquil Primer, and used homemade decals to represent a machine from Jasta 6 in 1918. The finished model scales perfectly with Phillip Drew's drawings in the November 1973 issue of *Model Airplane News*. Because of the unusual materials, I recommend this kit to experienced modelers. I spent 25 hours on mine, much of that time in painting and marking. The model's delicate looks belie its hefty feel.

Bill Gebhard



Wayne E. Moyer

**Kit: Wrangler Thunderbird****Scale: 1/43****Manufacturer:** Starter, available from Mini-Auto Emporium, 495 New Street, Renfrew, ON, Canada K7V 1G9**Price:** \$24.50.

THE POPULARITY of the Grand National competition cars that Monogram has enjoyed with its 1/24 scale kits has now filtered down to the 1/43 scale market. Starter's first NASCAR kit is molded in epoxy resin and includes chromed metal wheels, vinyl tires, vacuum-formed clear plastic front and rear windows, and a photoetched spoiler. Detailing is outstanding; the baseplate has the fire wall, instrument panel, seat, fire bottles, and roll bar molded in. The body shell has roll cage detail inside.

The 20-part kit is simple enough to build without instructions; that's good, because

the instructions only show decal placement. There was no information on the colors of the interior, so I referred to Monogram's instruction sheet and used Floquil R9 Primer here. The decals provide all the markings necessary, but the sponsor logos were printed as separate pieces and were slightly oversize.

The kit fit together without trouble, although the windshield was slightly small so I filled the gaps with Micro Kristal-Kleer. You could mask off the rear section of the car and paint it blue, but the decals provided can save this step with minor touch up. The finished model is accurate compared to the information in the December 1982 issue of *Hot Rod*. The model looks realistic and I cranked it out in eight hours, half of that applying the decals. A beginner can build this kit, but should have some decaling experience.

Wayne E. Moyer

**Kit: No. 9035, Northrop F-5B (CF-118)****Scale: 1/72****Manufacturer:** ESCI, Via Torino 15/19, 20063 Cernusco sul Naviglio, Milano, Italy**Price:** \$5.95.

NORTHROP'S F-5 family of light fighters is one of the most successful export aircraft of modern times. The F-5B is a two-seat fighter outgrowth of the supersonic T-38 Talon trainer; the two aircraft are nearly

identical except for different intakes, the F-5's wing root leading-edge fillet, drag chute housing, and internal equipment.

ESCI's kit captures the clean lines of this aircraft, a feat that hasn't been done correctly until now. The 75 parts are molded in silver-gray and clear styrene. The sharply recessed panel detail is the best I've seen in this scale. To allow production of different versions of a basic kit, a modular construction method is becoming more common. In this case, the fu-





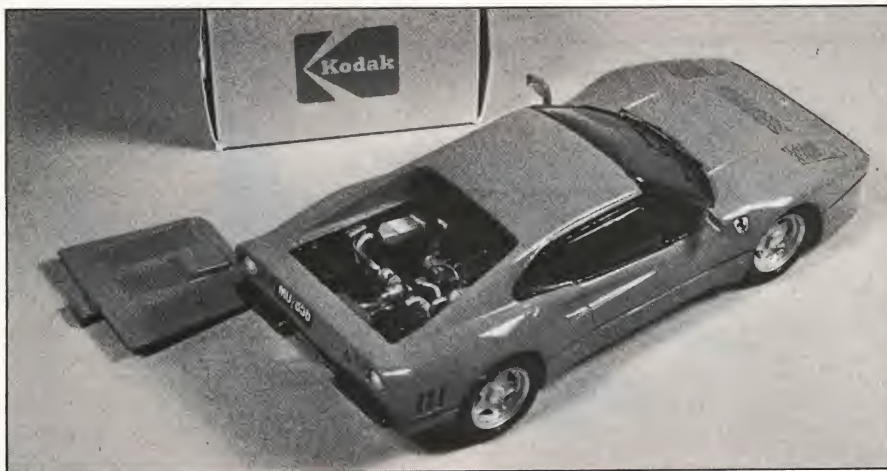
selage halves forward of the intakes are separate moldings, replaced by a single seat cockpit section in the F-5A kit (No. 9032).

This kit provides alternate nose gear struts (the Dutch single-seaters have a different strut), area-ruled "peanut" wing tip fuel tanks, wing pylons, and Sidewinder missiles. The decals provide markings for F-5Bs from the U.S.A.F., Canadian Armed Forces, Norwegian Air Force, and Royal Netherlands Air Force.

The instructions are easy to follow and provide four-view drawings for each marking option. Each two-piece ejection seat is well molded, although joining the halves carefully is important to avoid sanding the tiny seam. The forward fuselage mates well with the rear and the wing/fuselage/intake joint is well engineered, with little filling

and sanding needed. The decal instrument panels are more realistic than ESCI's earlier efforts. One minor inaccuracy that is difficult to fix is the omission of the frame brace between the two hinged canopies. ESCI's rendition of the complicated canopy hinges is the best in this scale, but it isn't clear how they attach to the canopies.

I modeled the U.S.A.F. version and used the kit decals except for the black stripes on the trim and wing walks; I substituted Scale-Master stripes since they fit better around the curved fuselage. The model scaled well with the specifications in Squadron/Signal's *F-5 in Action*. I spent 10 hours on the model, about average for this size and scale. It's easily built by experienced modelers, while the modular fuselage may present minor problems for the novice. *Paul Boyer*



Wayne E. Moyer

**Kit:** 1984 Ferrari GTO

**Scale:** 1/32

**Manufacturer:** Automodelli Hi-Fi, available from Valley Plaza Hobbies, 12160 Hamlin Street, North Hollywood, CA 91606

**Price:** \$39.95.

UTTER THE NAME Ferrari and immediately images of low-slung, stylish, and fast Italian sports cars come to mind. The 1984 GTO is no exception. This 60-part white-metal kit also includes photoetched detail parts, clear plastic windows, jewel headlights, and vinyl tires. The detail is good, although the interior door panels are represented by decals. The one-piece body has a separate engine hatch and the rear suspension, engine, and transaxle are well detailed.

Even though the instructions have exploded-view drawings, I had to dry-fit the

engine and rear suspension parts to be sure of their locations. The spring shock units (Nos. 9 and 10) should be installed before the cross brace (No. 6). The vacuum-formed clear windows were slightly undersize, so I cut them apart and filled the gaps with Micro Kristal-Kleer. I couldn't get the rear hatch hinge to work, so I made it a lift-out feature. Otherwise the kit went together well. Testor makes an Italian Red in its Model Master auto line that is perfect for the Ferrari if applied over a white primer.

The finished model scaled a little small, 1/34 rather than the advertised 1/32. A good reference for the GTO is the May 1984 issue of *Car*. The model was easy to build despite the early problems with the suspension and hatch hinge. I put 15 hours into it, about half what I would spend on a 1/43 scale car with this much detail. A beginner should enjoy building it. *Wayne E. Moyer*

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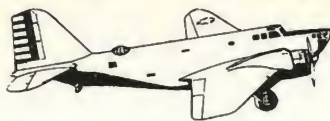
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E. R. Staszak

Kit: No. PJW12, Scimitar F. Mk. 1

Scale: 1/144

Manufacturer: Welsh Models, Hillside Cottage, Leckwith Hill, Nr. Cardiff, Glam. CF1 8AS, Wales

Price: Approximately \$3.00.

FOR THOSE WHO FIND even 1/72 scale aircraft too big for their shelf space, an increasing number of injection- and vacuum-molded modern fighters are available in what has been known as "airliner" scale. Welsh Models' vacuum-formed Scimitar kit contains 18 parts, including a clear canopy and white-metal landing gear. There are no interior parts.

The instructions are minimal—just a three-view color guide and written assembly notes, inadequate for novice vacuum-formed kit builders. Although they advise cutting wing fences and gear doors from

sheet plastic, no templates are provided. Only British roundels are included on the decal sheet.

Surface detailing is above average, but the fuselage is undersize in all dimensions according to a March 1979 article in *Aeroplane Monthly*. The fit is adequate, but the attachment of the horizontal stabilizers to the vertical tail is weak due to the lack of tabs and slots. The canopy fits poorly to the fuselage and requires careful filling. A nice touch is the bulkhead that prevents seeing the exhaust through the intakes.

With care, effort, and good references, an experienced vacuum-formed kit builder can produce a nice model from this kit, but the lack of detailed plans and exploded-view assembly drawings will give beginners fits. I spent 25 hours on mine; this was a little faster than usual since I didn't have to scratchbuild landing gear. E. R. Staszak

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Brian Gibbs

Kit: PZL-37A/B Los

Scale: 1/72

Manufacturer: Mikro 72, Poland, available from APC Hobbies, Box 122, Earlsville, VA 22936

Price: \$8.00.

THE LOS (ELK) saw limited service against the Germans in the unsuccessful campaign to save Poland from the Blitzkrieg. The Polish medium bomber also was used by Bulgaria, Greece, Romania, Turkey, and Yugoslavia. This is the third Mikro 72 kit to reach the U.S., following the Czapla and Yak-1. The kit contains 62 parts molded in pale blue and clear styrene, and features optional single or double vertical stabilizers for the PZL-37A or B respectively.

The ten-step instructions feature good diagrams with history and color notes in English, French, German, and Polish. The

well-printed decals provide markings for one Romanian and three Polish machines. Cockpit detailing is good, but the clear parts are slightly thicker than average and make it hard to see the interior. Panel line detail is raised and the overall quality of the moldings is similar to late Frog kits.

I didn't have any major problems in construction. The only area that didn't fit well was the horizontal stabilizer to the fuselage; careful trimming and filling was necessary here. The finished model scaled perfectly with the 1/72 scale drawings in *Samoloty Września 1939* by E. J. St. Jurkiewicz. I finished my model in seven hours and modelers with a little experience should enjoy building this kit.

By Western standards, the model is average, but it is the best kit ever from Poland and goes together better than most Czech kits. I'm looking forward to more from Mikro 72. Art Loder



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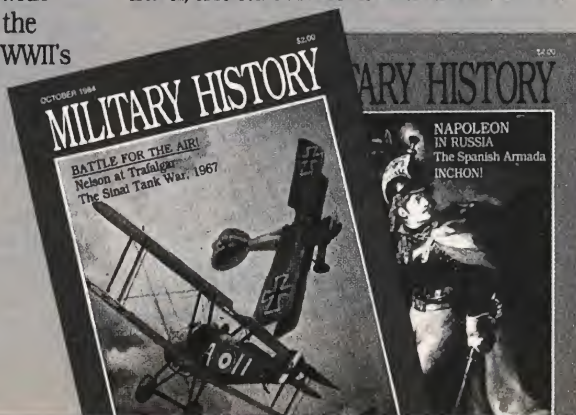
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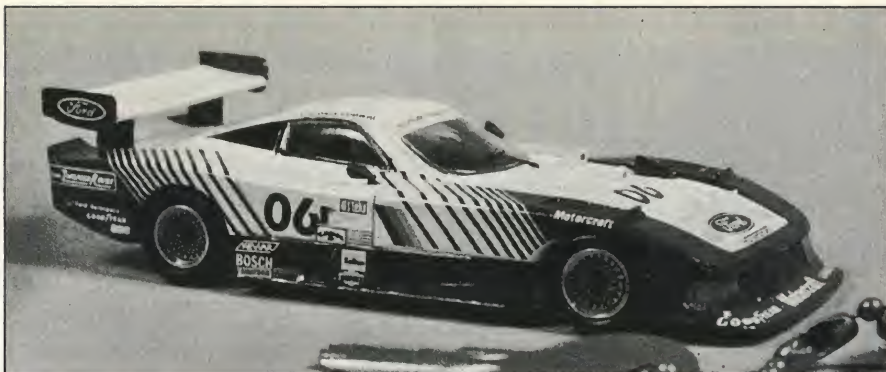
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Wayne E. Moyer

**Kit:** Ford Mustang GTP

**Scale:** 1/43

**Manufacturer:** Starter, available from Mini-Auto Emporium, 495 New Street, Renfrew, ON, Canada K7V 1G9

**Price:** \$24.00 Canadian (about \$18.00 U. S.).

IT'S CALLED A MUSTANG, but there the similarity ends. The GTPs are built for International Motor Sport Association (IMSA) road racing, not cruising around town. Ford employs the latest technology in the GTP — a carbon fiber tub frame supporting a streamlined composite body and the turbocharged four-cylinder engine.

Starter's kit features an epoxy resin body complete with all scoops, louvers, vents, and exhausts cast integrally. The rest of the 25-part kit is made up of photoetched brass details, turned aluminum wheels, rubber tires, and clear, vacuum-formed plastic windows. The black chassis plate has the instrument panel, seat (including belts), and visible engine detail molded in. The rear wing has photoetched end plates and support struts. The

wheels consist of turned aluminum alloy rims with photoetched brass spiders.

Detailing is superb; the super-thin spoilers and crisp louvers lend a scale effect equal to many 1/25 scale models. The kit virtually falls together, and that's good because there are no assembly instructions. I just had to sand the chassis a little to get it to drop into the body. A few washed-out photos are included to show decal placement, but I had to check my references to be sure. The excellent decals wrinkled going over the compound curves, but with care can do the job. I don't recommend using strong solvents on them. I touched up the markings with Humbrol No. 15 Blue.

Starter's kit builds into a realistic miniature with a minimum of time and effort. I spent six hours on mine, half of that on the decals. A beginner could build it but experience is needed for decaling. While this version (Elkhart Lake No. 06) is still available, the 1984 7-Eleven version has been issued. This is not just a decal change, as the front end has been considerably revised to accurately model that car.

Wayne E. Moyer



**Product:** SnJ Spray Metal

**Manufacturer:** SnJ Model Products, P. O. Box 608, Carmichael, CA 95608-609

**Price:** Starter kit: \$8.90 plus \$1.50 shipping. Refills: paint \$4.95, powder \$3.95.

SNJ SPRAY METAL is a new metal paint with a different twist — spray-on paint and rub-on silver powder. SnJ's starter kit includes a 1½-ounce bottle of silver paint, ½-ounce bottle of silver powder, ⅝-ounce mixing bottle, black buffing cloth, and detailed instructions. SnJ says its product can be masked without lifting and can produce three shades of silver with one application.

As with any method of producing a bare-metal surface, the plastic must be completely

smooth and blemish free. The silver paint must be airbrushed and SnJ suggests waiting 5 to 10 minutes between each of three misted coats. After the silver paint has dried for at least an hour, selected panels can be buffed to a metallic sheen. The silver powder can be polished onto panels to produce a shinier surface and should be applied within 12 hours of the silver paint. After 12 hours, all the surfaces can be masked.

The paint sprayed on easily and resulted in a pleasing semigloss aluminum finish. Buffing increased the gloss, but produced a silver-speckled effect. Buffing the silver powder over this, though, results in a much better metal effect. Additional applications of the powder and polishing make the panels even shinier.

I applied masking tape and Scotch Magic tape over unbuffed, buffed, and silver polished panels. After leaving the tapes on the model for 30 minutes, when removed both lifted a few silver flecks but didn't mar the surface. The areas polished with the silver powder were more susceptible to fingerprints, but the prints can be polished out with a soft rag. SnJ Spray Metal can be toned by adding enamels, but I didn't try this.

My first try with SnJ Spray Metal produced good results, and I hope further practice will reveal its full potential.

Paul Boyer

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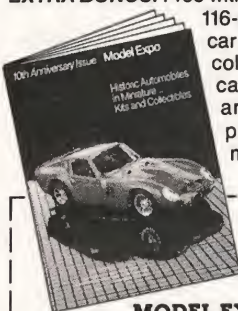
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Let us know what you think! Comments, suggestions, corrections, and additional information on FSM articles are welcome in this column. Letters submitted for publication should be clearly marked "To the Editor" on both the envelope and the letter, should be typed or hand-printed, and should be no more than 300 words long.

**More super glue tips.** I read with interest Lloyd Jones' article on using cyanoacrylate glues. One point I thought I'd add is that in using super glues to fill, it is imperative that you sand within a few hours of application. I've seen cases where modelers have layered on tons of cyanoacrylate and gone back to try to sand the stuff and it gets so hard that it is almost impossible to shape.

You might try asking your dentist for a little dental acrylic powder to mix with your super glue to fix big gaps. If you've ever tried patching a mis-drilled machine gun location in a wing leading edge and re-drilling, you'll note that the drill will jump back into the soft putty. Dental acrylic mixed with cyanoacrylate fills such holes very solidly.

Griffin T. Murphey, D. D. S.  
Fort Worth, Tex.

I've been using Duro cyanoacrylate since it became available and would like to pass on a couple of things that I've learned. Any parts glued with the super glues must be clean and dry. Mold release agent, if not washed off, will prevent the bonding of the parts. A quick wash in warm water and dishwashing detergent will accomplish this.

In the reverse of Mr. Jones' technique, I use cyanoacrylate in structural applications: fuselage halves, wing halves, landing gear struts, and so forth. After joining the two parts, a bead of Micro Weld can close any gaps between the parts. Light sanding will polish the seam.

Nothing can beat the super glues for gluing biplane struts. This is a case where strength is the primary factor; often a heavy top wing is supported by very thin cabane and "N" struts. I've also had moderate success using super glues to join different materials. Small copper or aluminum tubing can be used as machine gun barrels or exhaust stacks. A drop of cyanoacrylate will join them to plastic parts.

Finally, a little super glue goes a long way. I have learned, the hard way, that the least amount used is enough to do the job.

As a 40-year-old modeler, I look forward to each copy of FSM. The magazine gives me a chance to see "how the other guys do it." My only complaint about the hobby is that there are too many F-16s and not enough "real airplanes" — you know, the kind with tail wheels and propellers.

Dave Linehan  
Houston, Tex.

**And the author heard from.** In your May/June 1985 FSM Update column, under the heading of "Industry News" is the announcement that Aeolus Publishing has acquired the right to use the name Scale-Master. This is in error, as the contract expressly prohibits the use of the Scale-Master name

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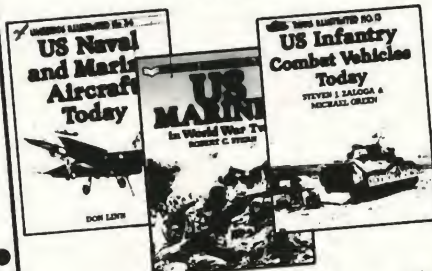
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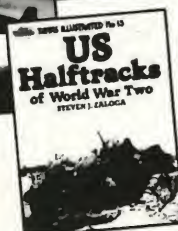
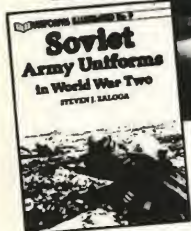
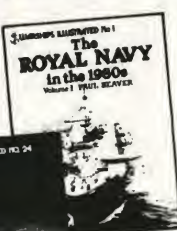
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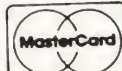
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in anything but advertising and catalogs. They do have the right to reorder old subjects as they desire, and they do have the exclusive distribution name otherwise. I have maintained all rights and title to the copy-right. I would appreciate a correction to that effect.

Lloyd S. Jones  
Costa Mesa, Calif.

**Good news, bad news.** I recently bought the first two issues of your magazine from a shop here in Hong Kong. I am genuinely impressed with FSM. The contents are well chosen, sensibly illustrated, of real value to modelers of any level of skill, and your reviews point the way for all. So many magazines assume that the sources and uses of tools and accessory products are already known by all modelers — it can be so frustrating trying to find out where to get metal foil for example, and then how to use it! Your magazine tackles these problems with enlightening perception.

Those Spitfire color profiles [Winter 1982 issue] were superb! I am an aircraft modeler and hope to see more of these.

N. J. I. Millman  
Hong Kong, B.C.C.

Although I find your publication most helpful and useful, there are times you drive me up the wall.

Please have your authors check their references before you print their material. In your March/April 1985 issue in the article by George DeWolfe he refers to Donegan Optical Co. He gives their address and it is wrong! The correct address of Donegan is 15549 West 108th Street, Lenexa, KS 66219. The company will send a catalog on request but will not include a price list. They will also tell you the name of the local dealer handling their product.

I have a visor from Donegan and am in need of another so it was helpful to discover their location. It is frustrating to depend on accuracy and then discover the information to be incorrect. I realize that checking every "t" and dotting every "i" is difficult.

Thanks for letting me get this off my chest. Do keep up the good work, you've a quality magazine and it is useful to the hobbyist as well as the professional.

Warren O. Harry  
Pinch, W. Va.

**About submitting articles.** I'm thinking of writing an article for FSM, but don't know how to go about it. Do all your articles come from professional writers? Do you take the photos, or do I have to provide them? Does FSM pay for articles?

Bruce Patrick  
Buffalo, N. Y.

[Glad you asked, Bruce. First — and most important — modelers, not professional writers, contribute almost 100 percent of the material in FSM. If you can clearly describe your modeling techniques in a letter to a friend, you're qualified to be an FSM author.

We generally use photos submitted by the author, and yes, we do pay for articles, upon acceptance. Our editorial secretary, Monica Borowicki, will be glad to send you a copy of our handout, "Writing Articles for FSM," if you write to her and request one. — Bob Hayden]

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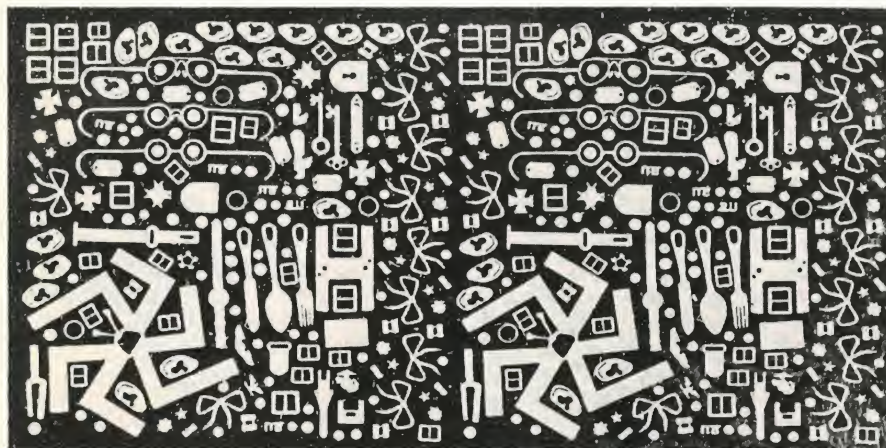
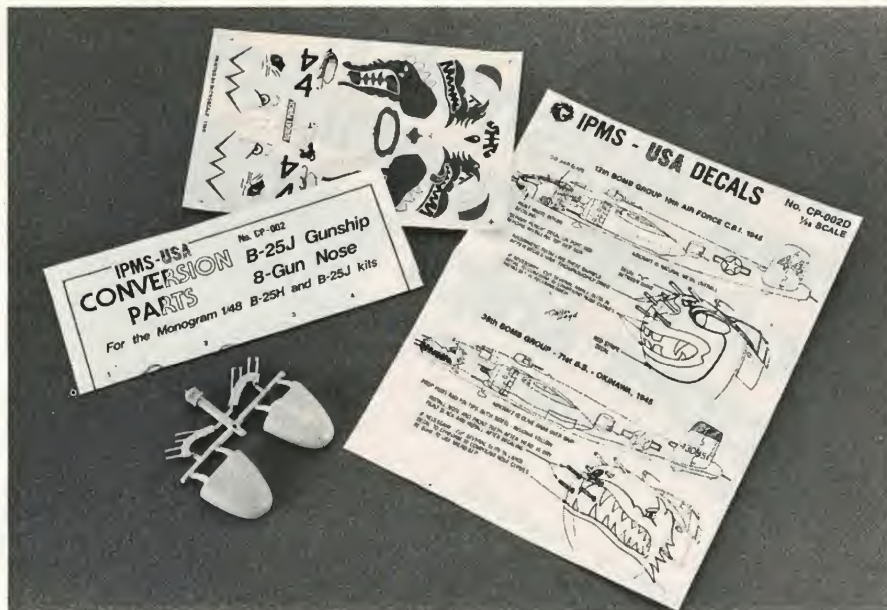
FSM invites manufacturers, importers, and distributors to submit product samples. Information on new-product announcement and review policies is available from FSM Update, FINESCALE MODELER, 1027 North Seventh Street, Milwaukee, WI 53233.

FSM readers should check their local hobby shops for the items in this column before writing directly to the manufacturers.

FINESCALE MODELER staff photos by  
A. L. Schmidt and Paul A. Erler

## IPMS conversion and detailing parts

IPMS/U. S. A., P. O. Box 480, Denver, CO 80201, offers several special products for members only. Items available include No. CP-002 (right), B-25J gunship nose to fit Monogram's 1/48 scale kit, and BP-006 (below), 54 mm photoetched brass World War Two combat accessories. Each sells for \$5.00, plus 10 percent for postage and handling.



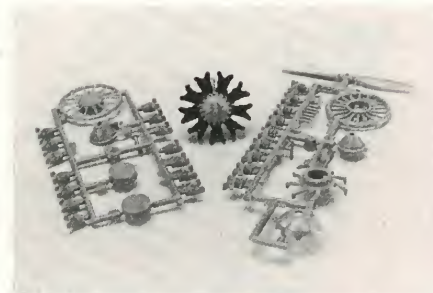
## T34/85 turret kit

Available from John Morgan/Add On's, 25418 Charles Avenue, Hayward, CA 94544, is a 1/35 scale cast-resin T34/85 turret model 1944, intended for use on a Tamiya T34/76 model 1943. Parts included are a turret; sheet styrene turret roof (two pieces); gun barrel and tip; gun mantlet; double ventilators; uncovered periscope; loader's hatch ring; and mantlet plate. The kit sells for \$9.75 postpaid.



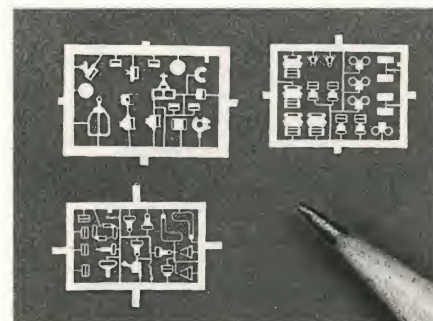
## Abrasive blasting gun

The Mini-Sandblast Gun (model HS342) can be used to remove rust and old paint, clean surfaces which are carved or difficult to reach, and etch designs on wood or glass. It comes with a 4-ounce jar, 8-foot air hose, 220-grit aluminum oxide abrasive, and face mask, and the gun must be connected to an air compressor of at least 1/10 hp. Produced by W. R. Brown Inc., 2701 North Normandy Avenue, Chicago, IL 60635, the Mini-Sandblast Gun retails for \$39.95; add \$1.50 for postage if ordering from the manufacturer.



## 1/32 scale aircraft engine kits

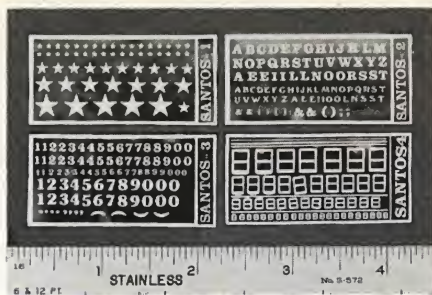
These three 1/32 scale aircraft engine kits are available from Williams Bros. Inc., 181 Pawnee Street, San Marcos, CA 92069. Stock No. 309 (center) is a Pratt & Whitney Wasp; 310 (left), Pratt & Whitney Twin Wasp; and 311 (right), Wright Whirlwind. These engines were originally produced for complete Williams Bros. aircraft kits, but each is now offered separately for \$2.25; add 15 percent for postage and handling.



## Jet seat belt buckles

Waldron Model Products, 1358 Stephen Way, San Jose, CA 95129, has introduced 1/48 (shown) and 1/32 scale jet seat belt buckles. Each is priced individually at \$3.00; a full set of three frames is available for \$9.00. Add 10 percent for postage on domestic orders, 15 percent on foreign orders.





#### Photoetched brass parts

Santos Miniatures, P. O. Box 4062, Harrisburg, PA 17111, offers four sets of photoetched brass parts: star assortment, alpha-bet assortment, numeral assortment, and buckle assortment. Each set is priced at \$3.50.



#### 54 mm Charles V figure

This 54 mm metal figure of Emperor Charles V in Roman armor (No. S2F5) is new from Miniaturas Andrea, Matías Turrión, 14, 2°C, 28043 Madrid, Spain. It comes with a wooden base and sells for 950 pesetas (about \$6.00) plus 35 percent for overseas postage. Painting instructions are included.



#### Brass structural shapes

Special Shapes Co., 1356 Naperville Drive, P. O. Box 487R, Romeoville, IL 60441, offers an assortment of brass structural shapes, product No. SSB-1. The package is priced at \$14.95, plus \$1.50 for postage. **FSM**

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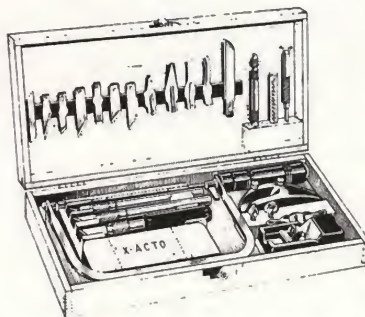
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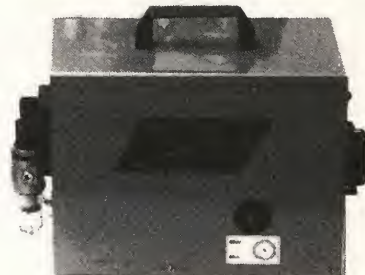
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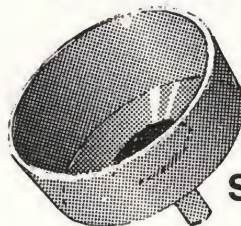
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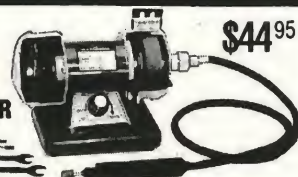
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## FROM THE EDITOR

# Coming next: FSM Reader Gallery

THIS ISN'T AN EDITORIAL. Instead, it's an announcement of a new feature we're planning for FSM — and a plea to you FSM readers to help make it happen.

One of the comments that came up most often in our recently completed survey (and in letters and conversations as well) is that many FSM readers would like to show off their models without having to write a full-length feature article. One reader put it best when he wrote "How about a place where those of us who aren't quite on the level of Shep Paine or Francois Verlinden can show what we've built?"

I agree, and as soon as we have enough material on hand to start such a column, we'll kick it off. Right now, though, the cupboard is bare, and I'm asking for your contributions.

Here's what we need. First, and most important, color slides. Any size from 35 mm up to 4 x 5 transparencies will do, but they have to be in focus and properly exposed. Second, we need caption information about the model: Who built it, what the subject is, the scale, the colors, the kits you used, and what's special about the model — all the things you'd want to know if the photos were of someone else's model. We'd rather have too much information than too little, so if you want to write me a long letter about the model, go ahead. Finally, we need to know who took the photo so we can give him credit.

Send your photos and captions to "FSM Reader Gallery," 1027 N. Seventh Street, Milwaukee, WI 53233, and include return postage and packaging if you want the photos back. And before I forget, yes, we'll pay for the photos upon publication. Fair enough?

I'm sure Reader Gallery is going to be one of the most popular features of the magazine. I want to hear your comments and suggestions for this new department, and I'm particularly looking forward to seeing photos of your models. Send them in soon!

*Bob Haydel*

Editor

FineScale  
**MODELER**

## NEXT ISSUE FEATURES



Texaco Star March 84C. Bill Gebhard.

The September/October issue of FSM will feature a top-notch mix of top-quality modeling articles. If you're eager to try something new, Frank Cuden shows you how to build your first airliner model, step by step. At the other end of the modeling spectrum, auto modeler Bill Gebhard first carves a wooden form, vacuum-forms his own body shell, then adds the shell to a 1/25 scale AMT chassis to model Tom Sneva's 1984 Indy car. Diorama expert Ray Anderson combines stunning color photos with solid techniques for modeling groundwork in any scale, and armor modeler Robert Skurda scratchbuilds a German "Lynx" light tank in 1/35 scale.



F-89 in 1/48 scale. Ron Taylor.

West Coast modeler Mike Dario tackles two colorful F-89s in 1/48 scale, both from vacuum-formed kits, and includes color-scheme drawings so you can do the same. John Lynn contributes a detailed, how-to-do-it feature on molding and casting techniques, and in addition to all of FSM's regular columns and departments, we'll have our once-a-year staff report on new figure releases from the manufacturers.

**ALL IN  
SEPTEMBER/  
OCTOBER  
FSM!**





Brian made the armor on his 12"-high model of Robert II, King of Scotland, from pure silver, while gold leaf was used for the gold elements in the heraldry.

## FSM SHOWCASE

# A king in silver — Brian Rodden's scratchbuilt Robert II of Scotland

**T**HE EXQUISITE SCULPTURE featured on these two pages portrays Robert II, King of Scotland, circa 1380. The figure wears armor handcrafted in pure silver. It is the work of miniature armorer Brian Rodden of Dover, New Hampshire, who was commissioned to sculpt this unusual figure. It stands approximately 12" high, is 15" long, 7" wide, weighs about 12 pounds, and is mounted on a mahogany base.

"From the historical perspective the sculpture is a historically accurate portrayal of how the King of Scotland might have appeared in his full heraldic regalia in the late fourteenth century," according to Brian, who earned a Ph.D. in history at Rutgers University before becoming a full-time sculptor of miniature figures. "The armor is based on medieval effigies, brasses, and actual pieces of armor surviving from the era," he says. "The heraldry and crest are taken from medieval rolls of arms and seals. The horse is a representation of the old English Great horse or Black horse, valued in the Middle Ages for its ability to carry the weight of the armored knight."

Brian created the original sculpture of Robert II from beeswax and epoxy resin, then made individual molds for sculpture and details. The basic figure was cast in fine pewter (also called Britannia metal) that is lead free.

"Each piece of armor was then forged from pure silver, using many of the same techniques employed during the Middle Ages," Brian explains. His techniques include hammering the armor into the desired shapes piece by piece — using carved wooden forms — then polishing the pieces. "The chain mail is formed from individual links of sterling silver wire and the silver rivets are individually emplaced as well," he says. "The trapper (the cloth covering on the horse) and the mantling on the helmet were formed from epoxy-impregnated brass wire mesh. The details of weapons, sword belt, spurs, and crown were gold plated."

Brian used pure gold leaf to create the gold elements in the heraldry, while Floquil and Winsor & Newton oil colors were used to color other elements in the coat of arms and figure. He airbrushed the coloring of the horse and base, but painted the rest of the figure by hand, using a variety of fine brushes. To highlight the elements of the heraldry, he says he outlined each lion and double treasure flory in a fine line of black paint.

Brian has worked with miniature sculptures since he was 10, and his work has won national awards from groups such as the National Sculpture Society and the Miniature Figure Collectors of America. These elaborate figures normally take him about three months to complete.

**FSM**









(Left) No kits of the Pilatus PC-6 Turbo Porter are available, so Ron scratchbuilt this one in 1/25 scale. The author installed an operating sliding cargo door made from sheet styrene on the

right side of the fuselage. Note the rudders on the floats. (Right) The subject of the model with standard landing gear. Note the propeller in auto-feathered position.

# Scratchbuilding the Pilatus PC-6 Turbo-Porter in 1/25 scale

A unique model of an amphibious STOL aircraft

BY RON LOWRY

NICKNAMED "Jeep of the Air" the Pilatus PC-6 Turbo-Porter is a super-STOL (Short Take Off and Landing) aircraft, quickly convertible to perform a wide range of missions. It can carry 10 passengers, lift 1½ tons of cargo, and cruise at 170 mph. No airport is required; the Pilatus can land in 130 feet and take off in 305 feet. Besides carrying cargo, it can tow gliders, fight fires, even be converted to a gunship. The PC-6 can be fitted with wheels, skis, floats, and the newly designed amphibious floats that I featured on my model.

Typical of many useful STOL aircraft the Turbo Porter is not aesthetically pleasing, but its uncluttered structure makes it an easy subject to scratchbuild. The lines are clean, straight, and virtually free of compound curves.

I borrowed the Swiss manufacturer's three-view drawings of the Turbo Porter from Fox Aero Services, the Canadian distributor for Pilatus Porter, and obtained huge factory drawings of the new amphibious floats from Wipaire, Inc., in Minnesota. I scaled down the

float drawings to match the 1/25 scale drawings of the aircraft.

The construction methods I used were straightforward with no need for a vacuum-forming machine or power tools (I'm a modeler who still finds a No. 11 blade a mighty tool). I used liquid plastic cement throughout, unless otherwise mentioned.

**Fuselage.** Figure 1 shows an exploded view of the construction of my model. Before starting construction, I drew the plans on tracing paper, and using these as templates, transferred the shapes to .060" sheet styrene. I cut out accurate side profiles of the boxlike fuselage, then cut away portions of both sides to represent the double door windows on the left and the sliding door on the right. The circular cabin windows and cockpit door windows were cut out next. I had to scribe the vertical lines at the beginning of the cockpit and at the back of the cabin to get the stiff .060" styrene to yield to the proper fuselage shape.

To keep the fuselage shape, I glued bulkheads behind the ventral air scoop, at the engine fire wall, at the back of the cabin, and at the tail section. The floor was then cut and glued in position.

**Forward fuselage.** To make it easy to build, I split the long, tapered forward fuselage into three sections: spinner, nose, and engine cowl. The lower section of the forward fuselage (including the engine air scoop) was easy to make using the templates. The taper and curvature of the upper portion section were crucial. To make it easier to shape the upper cowl, I cut separate right and left sides from .020" sheet styrene.

To butt and cement the two halves together successfully, I cut out a center line keel using .060" sheet styrene and glued it to the first and second bulkheads and the fuselage floor. I took care of the correct slope by cutting the top of the keel to match the tops of the bulkheads. For a sturdier structure, the two upper nose halves were attached to a ½"-wide platform of .020" styrene glued to the top of the keel. Once the glue dried, the two sides were drawn down, shaped to the correct contour, and attached to the lower cowl.

To produce the conical cowl with the least effort, I carefully measured and cut two circular bulkheads from .060" sheet styrene. I drilled a ⅜" hole in the forward bulkhead for the propeller.



ler shaft, and made a .060" center line keel with a slot in the front to clear the propeller shaft. Then I glued the circular bulkheads to the keel.

Next, I tightly wrapped a piece of .020" styrene around this internal structure and glued the seam on the bottom. I filled the joint with filler putty and wet sanded it smooth. I beveled the forward edge of the cowling for a more realistic appearance, and made the exhaust stacks from scrap plastic.

**Spinner.** To make the spinner I used 14 pieces of .060" sheet styrene glued together and compressed in a vise until the glue was bone-dry. This lamination was then carved to shape with a sharp No. 11 blade, then refined with files and sandpapers until smooth.

I drilled a  $\frac{3}{32}$ " hole about  $\frac{1}{4}$ " into the spinner and inserted a piece of brass tubing which served as a handle and a propeller shaft. When the spinner was properly shaped, I drilled three holes, 120 degrees apart, to accommodate the propeller blades.

**Carving the propeller.** To make each blade, I laminated two pieces of .040" sheet styrene and carved them to shape. I always build the blades a little wider and much longer than necessary. First, I pencil the basic outline of the propeller blade on the lamination, Fig. 2 — the extra length at the base of the blade serves as a handle while carving. When shaping is complete, the handle is trimmed back to a short pin-like dowel used to fit the blade into the spinner. The extra width allows me sufficient room to correct a carving mistake or two as I go along — better than starting over again.

As with the spinner, I carve with a sharp No. 11 blade. The most common mistakes are carving the blade too thick or without enough taper. Once the rough shape of the blade is reached, I gradually refine it to the proper thickness with fine files and sandpaper. Particular heed is given to the final shaping to see that I don't lose the twist of the blade. A similar propeller from a plastic kit makes a good reference.

**Wire float braces.** The wire structure that carries the floats and stiffens the strut attachments consists of three lengths of  $\frac{3}{32}$ " spring steel wire laid across the fuselage floor, Fig. 3. I bent the wires to conform with the angles of the float attachments, and pushed them through holes drilled in the sides of the fuselage. Once I had achieved the correct angle and alignment, I secured the wires to the floor with 5-minute epoxy, then boxed them in with scrap plastic to prevent them from breaking loose. I cut another floor from .060" sheet styrene and glued it on top. Using an old flying model technique, I wrapped the ends of the two rear wires on each side together with polyester

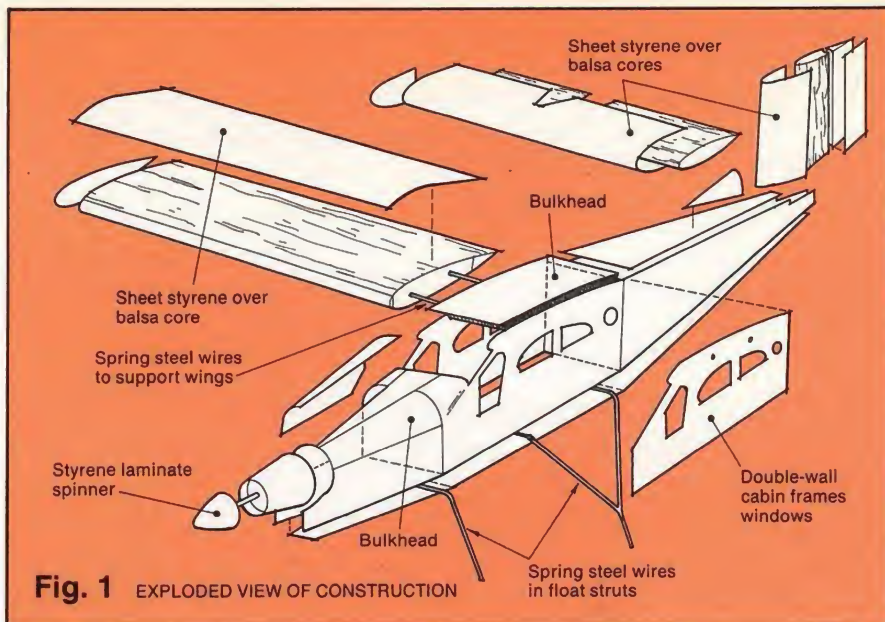


Fig. 1 EXPLODED VIEW OF CONSTRUCTION

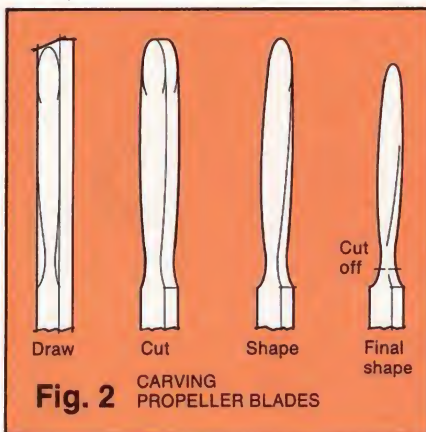


Fig. 2 CARVING PROPELLER BLADES

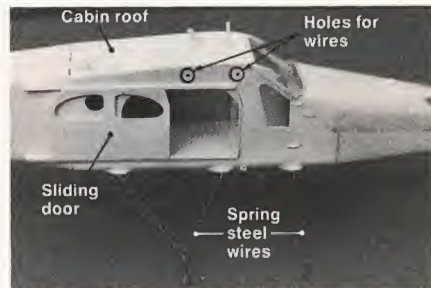


Fig. 3. Spring steel wire was used to support the fuselage on the floats. The wires go under the cabin floor and through the fuselage to the left float. The sliding cargo door is made from sheet styrene.

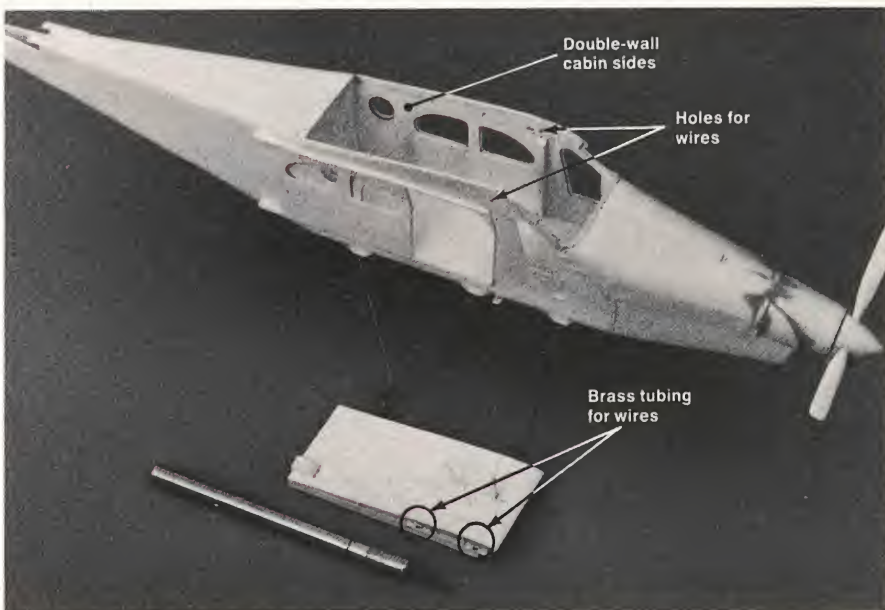
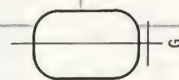
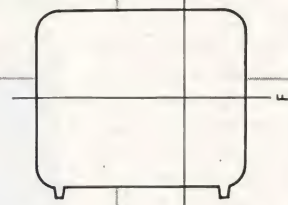
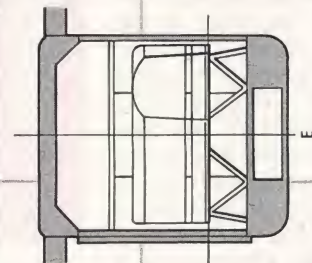
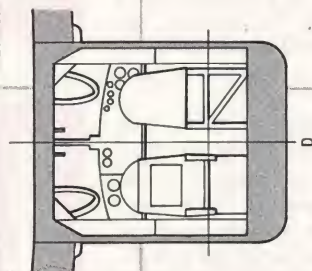
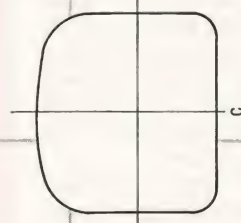
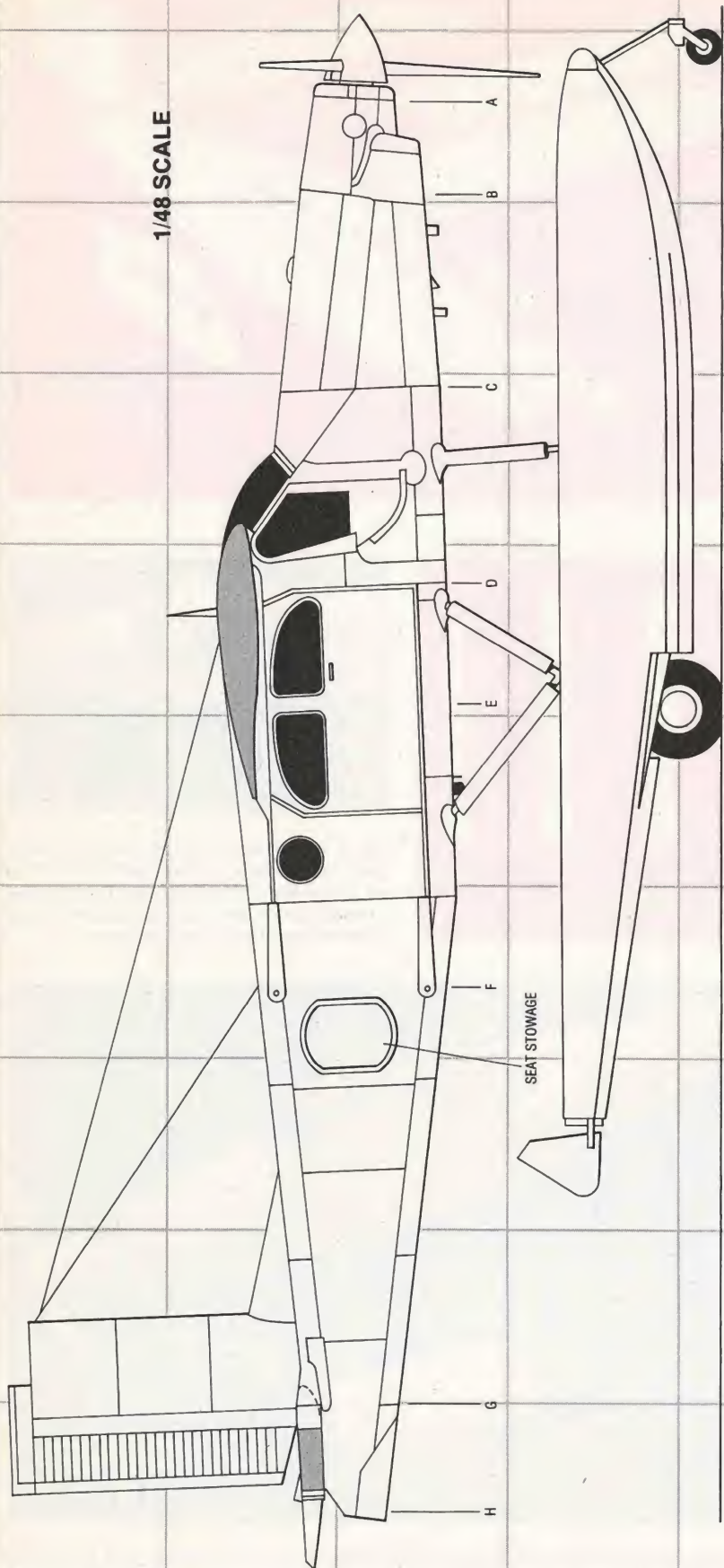


Fig. 4. Brass tubing through the cabin roof provides conduits for spring steel wires that hold the wings to the fuselage. The double walls of the cabin can be seen here. The smaller window openings of the outside wall hold in the windows that will be inserted from the inside after the model is painted.



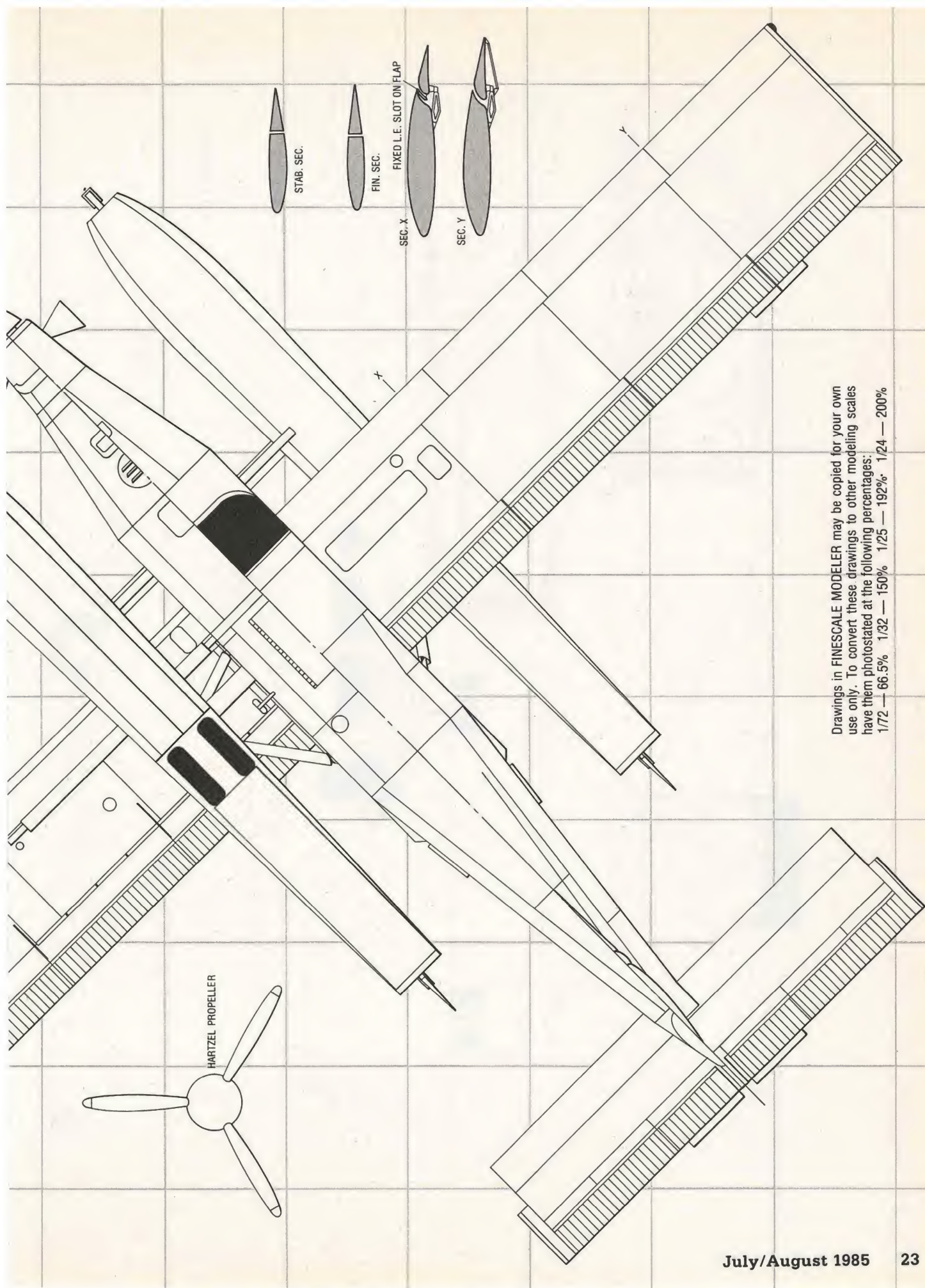
1/48 SCALE



LANDING LIGHT

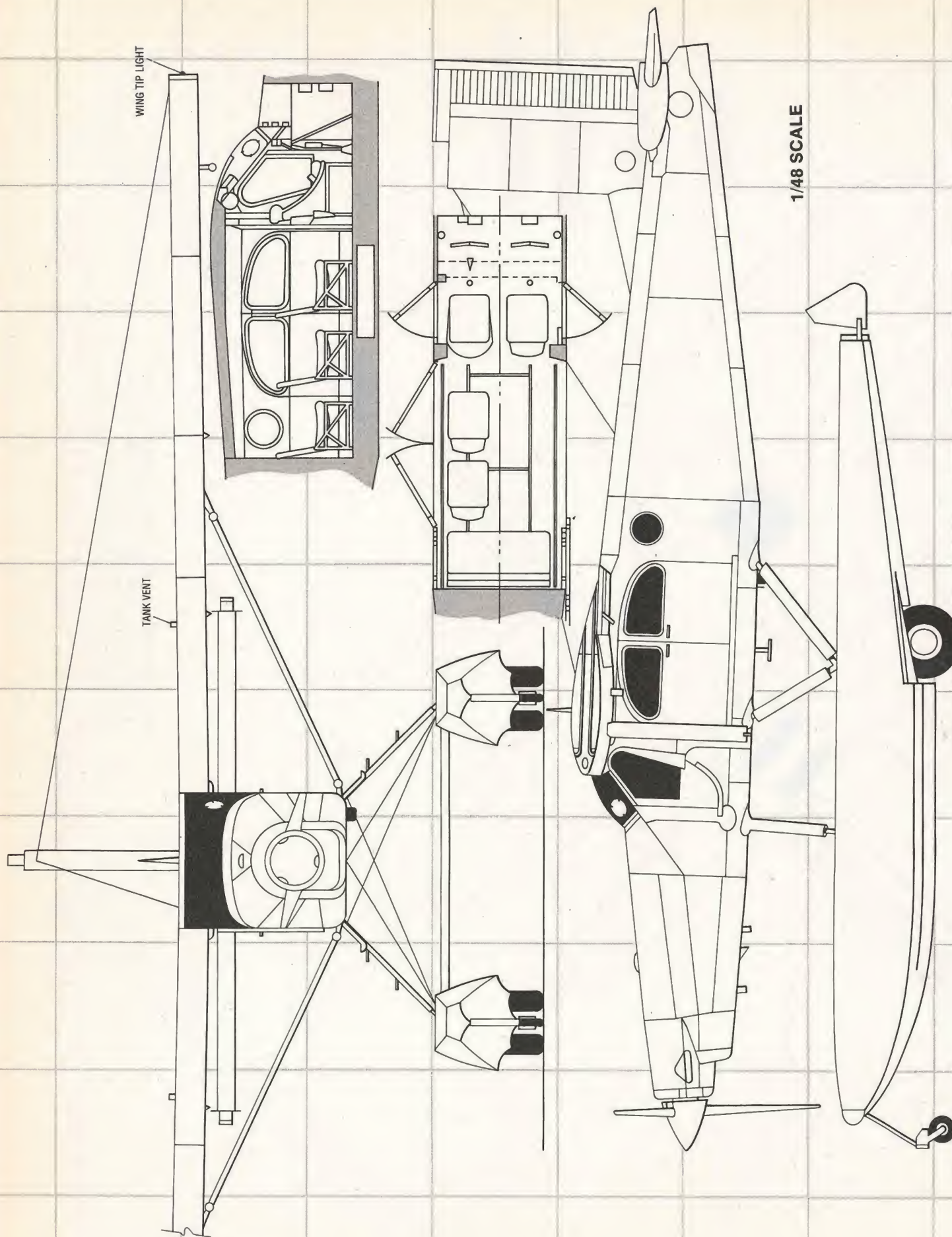






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 1/72 — 66.5% 1/32 — 150% 1/25 — 192% 1/24 — 200%







sewing thread and epoxied the joint.

**Cabin roof and wing supports.** I built the top of the fuselage in two sections, one to fit from the back of the cabin to the tail, the other to form the cockpit and cabin roof. Due to the design of the aircraft I had to use the cabin roof area to conceal some of the framework for attaching the wings to the fuselage, so I left it off for now. I epoxied and boxed in two pieces of  $\frac{3}{32}$ " (inside diameter) brass tubing across a piece of .060" sheet styrene, shaped to fit just the cabin roof area.

The exterior surface of the cockpit and cabin roof was then glued over the top, the forward edge carefully shaped and aligned to fit tightly against the windscreen which would be attached later. I added the two brass shim-stock roof antennas, and glued on the scrap plastic air vent. This assembly was then test fit between the fuselage walls where holes were drilled at the tube sites, Fig. 4.

**Window mounts.** To provide window mounts, I reused the fuselage templates to cut two .020" sheet styrene midsection profiles. I cut out the window openings  $\frac{1}{16}$ " smaller than before. Then I glued the partial profiles directly on the fuselage between the second and third bulkheads where all the windows are located, Fig. 4. When the glue had set, I sanded the edges until they disappeared into the shape of the fuselage.

**Sliding door.** The sliding door is a prominent feature on the aircraft, so I decided it should be operable on the model. I used .040" sheet styrene for the door and the running rails. Using a fine file, I beveled all the working edges at opposite angles, then glued the rails to the fuselage, slanting the top rail toward the tail slightly to keep the door from sliding completely off the rails. The touch of a fingertip smoothly moves the sliding door on the rails, Fig. 3. I scribed the remaining doors on both sides of the fuselage and added scrap plastic handles.

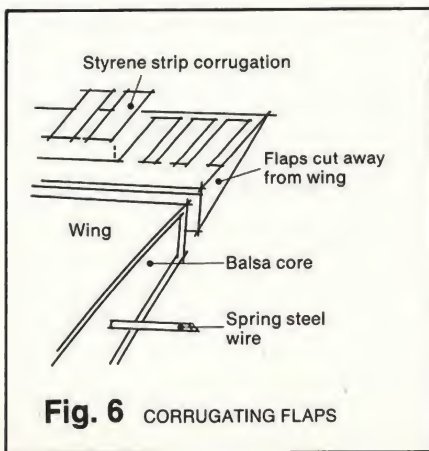


Fig. 6 CORRUGATING FLAPS

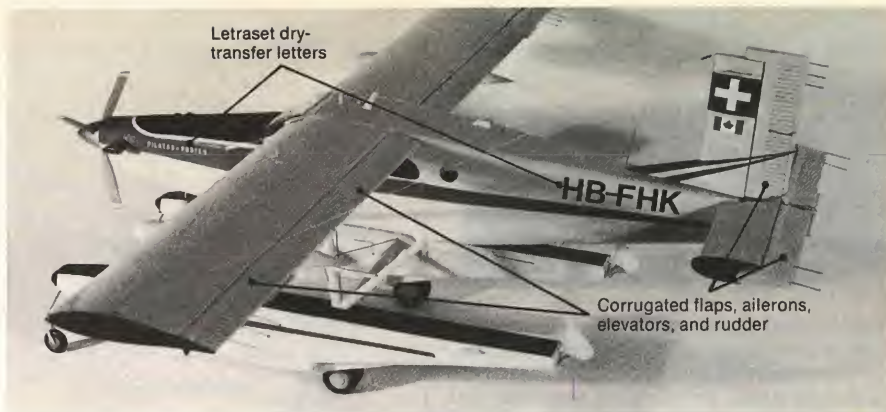


Fig. 5. The corrugated skin of the movable control surfaces was made with strips of styrene. The registration letters and nameplate came from Letraset rub-on dry transfers.

**Building the wing.** The balsa core wing provides strength, a bed for struts, and support when the ailerons are cut away. This core-and-skin method also allows building the leading edge without having to fold or bend plastic.

Beginning with the right wing, I penciled a slightly smaller outline of the wing planform on two separate sheets of  $\frac{3}{16}$ " balsa and repeated this step for the left wing. I cut the balsa with a sharp knife and used a steel ruler to keep the cutting lines straight.

Next, I hollowed out two narrow troughs in two of the pieces and epoxied  $\frac{3}{32}$ " brass tubing in each trough, measured to fit flush at the root end. Once the epoxy had hardened, I laminated the balsa layers using white glue. Later, spring steel wire would be inserted in the tubing to act as a truss, extending from one wing across to the other, via the cabin roof. Because of this, the locations of the tubes had to be carefully calculated beforehand.

Once the laminations were firmly set, I carved the cores to the proper shape with a No. 26 X-acto blade. Fortunately, there was no taper to this wing — only the contour of the airfoil had to be dealt with. When I had attained the correct airfoil, I gave the

cores a light sanding and rechecked the contour for accuracy. Next, I shaved off the leading edge from each core and replaced them with two laminated strips of .060" sheet styrene. The plastic leading edges were glued to the balsa cores with contact cement, then filed and sanded to shape.

Next, I cut out the wing shapes twice more, this time full size, using .020" sheet styrene. The skins were lined up carefully and attached firmly to the cores with contact cement. I used liquid plastic cement to bond the leading and trailing edges. When the cement had dried thoroughly, I cleaned the leading edge by filing and sanding it to conform with the correct shape of the airfoil. The trailing edge practically took care of itself, requiring a minimum of sanding to make it clean and sharp.

**Corrugated surfaces.** I cut the control surfaces from each wing first, then scribed deep lines in the plastic to distinguish the ailerons from the landing flaps. Next, I added a narrow piece of .010" sheet styrene along the forward edges. Corrugating the control surfaces required a great deal of patience and 312 tiny strips of styrene, all the same width, Fig. 5. I cut these from .010" sheet styrene, but the proper size Ever-

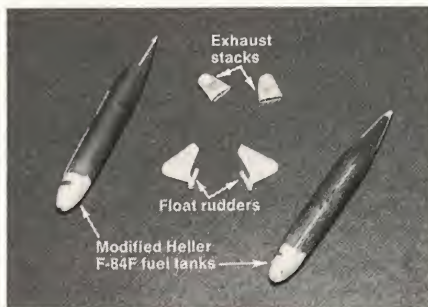


Fig. 7. The auxiliary fuel tanks were modified from Heller's 1/48 scale F-84F Thunderstreak kit. Also shown here are the scratchbuilt exhaust stacks (center top) and float rudders.

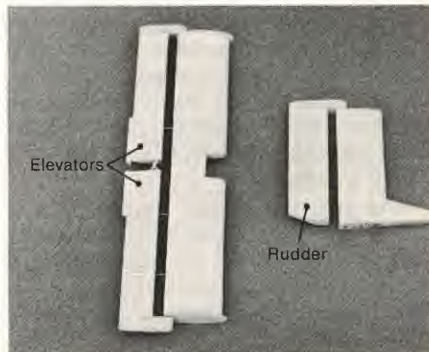
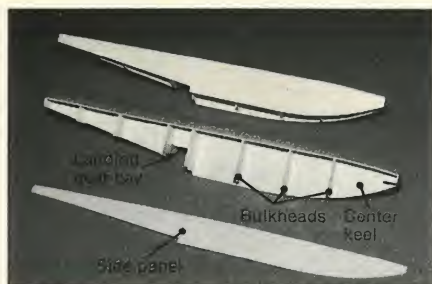


Fig. 8. The elevator and rudder were cut away from the tail and corrugated with strips of styrene.





**Fig. 9.** Float construction. The top float is nearly completed — only the bottom needs to be added. (Center) Note the cross section bulkheads, center keel, and bay for the retractable landing wheels.



**Fig. 11.** Large packaging staples were used for the float's nose gear struts. The main wheels came from two Revell 1/32 scale F-18 Hornets.

green strip styrene would have saved time.

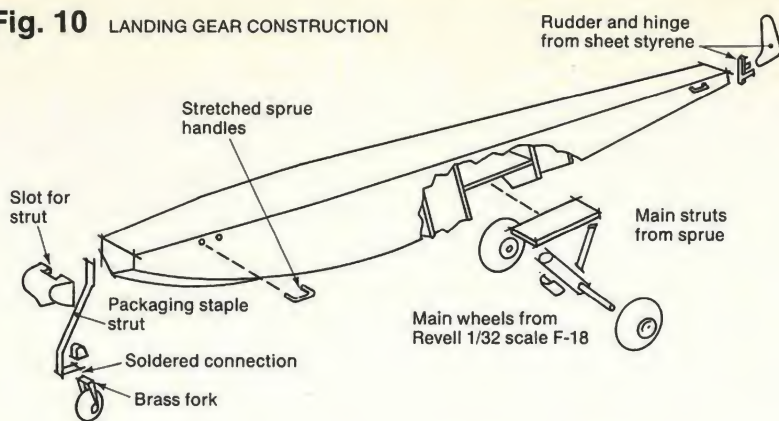
Starting at one end of a control surface I systematically worked my way across to the other, taking care not to lay a strip where the flaps and ailerons met, Fig. 6. I trimmed off any excess and repeated the entire procedure on the bottom surfaces. The multitude of sharp edges had to be slightly rounded, so instead of sandpaper, I used 0000 steel wool. It doesn't bite into the detail, and it's good for removing the raised edges of rescribed panel lines.

Next I rounded out the trailing edge of the wing and sanded the leading edge of the control surfaces to match. Then I added sheet styrene endplates and trim tabs. I used modified underwing fuel tanks from Heller's 1/48 scale F-84F kit, Fig. 7.

**The tail.** I used the same core and skin method to construct the tail as I did for making the wings, except this time I folded the plastic around the balsa cores. Since the tail parts were much shorter, I had little trouble getting the plastic to bend around the leading edges, Fig. 8.

I built the horizontal tail first, using 3/16" balsa and .020" sheet styrene. The

**Fig. 10** LANDING GEAR CONSTRUCTION



**Fig. 12.** To make the float struts, Ron wrapped sheet styrene around the spring steel wires. Note the struts between floats.

core was carved to the correct airfoil, encased in the plastic, and the trailing edge was sealed. Next, I cut the elevator from the stabilizer and corrugated it the same way I did the wing. To divide the elevators, I cut away the mid-section, drilled a deep hole in each core, and epoxied in a connecting rod of 3/32" brass tube. Lastly, I added the endplates. The procedure was the same for the vertical tail and rudder, but a core-and-skin dorsal fillet was added to the leading edge.

**Amphibious floats.** I made .060" sheet styrene keels using the side elevation drawings of the floats, and added nine cross section bulkheads, split in half and placed at regular intervals along the keel, Fig. 9. I added the .060" top surface next, then cut out .030" side walls and glued them along the bulkheads.

The bottom surface was complex so I built it in two parts, forward and aft, with a cutout in between to accept the dual-wheel undercarriage. Shaping the forward part still proved tricky because of the quadruple concave contour and the curve up to the nose bumper. I used

.020" sheet because it was more flexible. The aft part was relatively easy, so to maintain strength and rigidity I used .030" sheet styrene.

I carved the rudders and nose bumpers from sheet styrene, made six .010" sheet styrene inspection plates on the top of each float, and fashioned plastic rod tie-down handles. I carved wood oars, one for each float, from 1/8" mahogany, sanded, and varnished them smooth. I drilled holes at the strut attachment points, and installed a short piece of 3/32" brass tubing into each hole with super glue.

**Landing gear.** Figure 10 shows the landing gear construction. The nose landing gear struts are retracted into the nose of the floats when the aircraft is airborne or resting on water, the wheels tucked against the bumpers. Since I wanted the gear extended, I had to find something shaped like the spring steel struts yet strong enough to support the model. One day, while opening a package, I noticed that large industrial packaging staples would be ideal; unorthodox, perhaps, but the dimensions and rigidity were just right.



Using small pliers I straightened the staples, then bent them to the correct angles and epoxied them in slots at the back of the bumpers. I made the wheel forks using brass shim stock, and soldered them to the metal struts. I used scrap plastic to make the casters and added them to the tops of the wheel forks. I found suitable wheels in a box of spare kit parts, and inserted  $\frac{3}{32}$ " brass tubing for the axles. The wheels were attached to the strut assemblies with super glue.

The main undercarriage was easy to build. The main struts were made from cleaned-up sprue. I built the wheel hubs using six laminations of .060" sheet styrene and added the tires from a Revell 1/32 scale F-18 Hornet, Fig 11.

**Struts.** I epoxied a streamlined .040" styrene strip to the rear of each stiffening wire, leaving the ends of the wires exposed for fitting into the attachment points on the floats and fuselage. Next, I wrapped and glued .015" sheet styrene around each assembly and filed the trailing edges sharp. I test fit the struts to the floats and fuselage to make sure everything was properly aligned, Fig. 12.

The Porter's wing struts are not tapered, so they were simple to make — I laminated two .040" styrene strips for each strut.

**Interior detail.** Next was the fully detailed cockpit and cabin, Fig. 13. I used .020" sheet styrene to make the crew's bucket seats and .040" for the cushions. The seat belts and shoulder harnesses were made from .010" sheet styrene.

The instrument panel is a three-layer affair: the rear portion of .020" sheet styrene was painted flat black and the top layer is .020" sheet styrene with holes drilled for the instruments. This layer acted as a template for etching instrument details with a pin through the black paint of the base layer. A piece of clear acetate sandwiched between these layers provided the instrument glass. I made the throttle levers from scrap plastic and added them to the center of the panel. I also used scrap plastic for both sets of rudder bars, brake pedals, and the fighter-like control columns.

I added two rows of triple-seat benches to the cabin area. Plastic rod was used for the bench frames and .040" sheet styrene for the back rests and seat cushions. I used strips of .015" sheet styrene to simulate the T-rail supports. Except for the instrument panel, the entire interior was painted light gray, with olive green belts and harnesses.

**Molding the windscreen.** I carved a male mold for the windscreen from laminated basswood, then made a female cavity from  $\frac{1}{4}$ " balsa. I placed a piece of .040" SIG clear plastic over

the cavity, holding it in place with spring clamps. Next, I held the whole works about six inches above a red-hot stove burner — hot pad mitts are imperative here. The plastic softened quickly; it begins to go limp and smokes slightly, signaling the moment to remove it from the heat source. I pushed the male mold through the cavity to form the windscreen. Speed was essential because the plastic had to be shaped before it cooled. I test fit the windscreen and set it aside until the model was painted.

**Attaching the wing.** I glued the cockpit and cabin roof section to the fuselage walls first, then inserted two  $\frac{3}{32}$ " spring steel wires into the brass tubes of one wing, Fig. 14. I pushed these through the tubes concealed in the cabin roof and brought the wing root flush to the fuselage, then placed the other wing onto the wires. I had to bend the wires up slightly at the root sites to attain the proper dihedral. Once the correct angles were formed, I refit the wings and used super glue to fasten the wires inside the tubes and the wing roots to the fuselage. I used putty and sanded the wing joints smooth.

**Painting.** I airbrushed the model with Du Pont 30-S Platinum Gray "Hi-Speed" lacquer primer and wet sanded with 600-grit sandpaper to eliminate scratches and seams. I applied another coat of primer and carefully polished the model with Blue Magic. Next, I washed all subassemblies with lukewarm soapy water, rinsed them, and drip-dried them overnight.

I airbrushed the model with Rinsed-Mason automobile acrylic lacquers. This is a Canadian brand; similar brands are available in the U. S. I used General Motors 1979 Yellow and Ford 1973 Rangoon Red for the bright paint scheme. I left the propeller blades in the gray primer color, but the spinner was painted Volvo 1978 Metallic Silver. I used Floquil Engine Black (R11) for the anti-glare panels on the nose and the top of the floats.

After the paints were dry, the floats, struts, tail parts, and all movable control surfaces were carefully aligned, pinned, and epoxied in place. Next, I epoxied the propeller blades (in the feathered position) in the predrilled holes of the spinner. I slid the propeller shaft in place and epoxied the spinner in the recess of the forward nose.

**Finishing touches.** I used Letraset brand rub-on dry transfers for the HB-FHK registration letters and "Pilatus-Porter" name. The Swiss flags are homemade decals using ATP Clear Decal Sheet, and the Canadian flags are from a Canadair CF-104 Starfighter 1/32 scale sheet, Fig. 5.

I cut out the cabin windows from .020" SIG clear plastic. Using long-

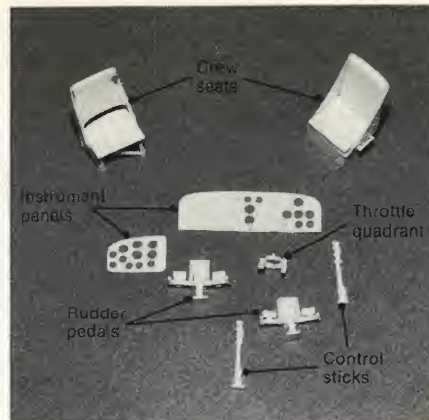


Fig. 13. All the interior components were made from sheet styrene and sprue.

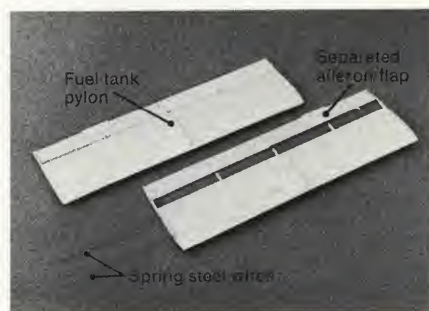


Fig. 14. Spring steel wires are inserted into the brass tubing buried in the right wing (bottom). The wires pass through the cabin roof and into the left wing (top).

nosed tweezers, it was easy to install the windows through the sliding door opening and epoxy the windows against the prepared edgings. When that was done, I positioned the sliding door on the running rails and attached the windscreen with super glue.

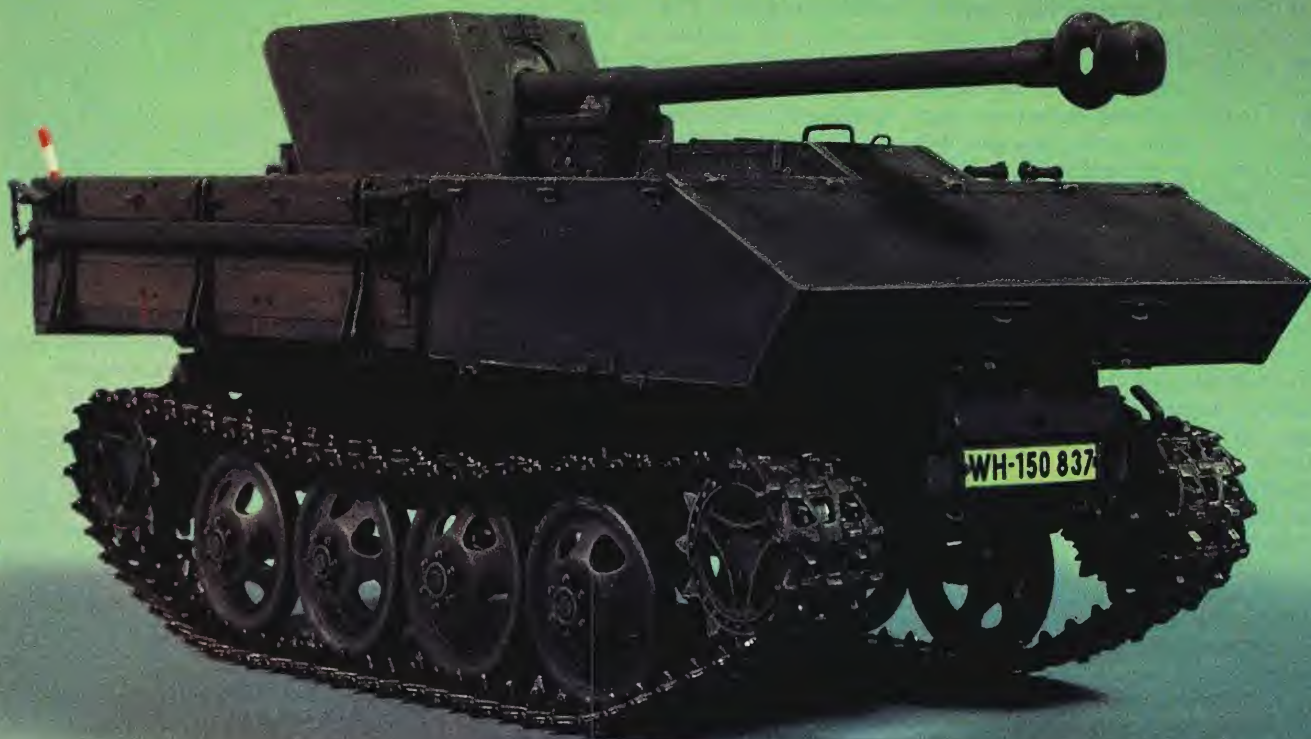
Of all the models I have built, the amphibious version of the Pilatus Porter PC-6 is the most unusual, using many scratchbuilding techniques that will come in handy on even more ambitious projects.

FSM

## SOURCES

- ATP Inc., 3014 Abelia Court, San Jose, CA 95121.
- Blue Magic, Paige Aviation Distributors, P. O. Box 5298, San Mateo, CA 94402.
- E. I. du Pont de Nemours & Co., Inc., Wilmington, DE 19898.
- Evergreen Scale Models, 1414 127th Place N. E., Suite 107, Bellevue, WA 98005.
- Letraset USA Inc., 40 Eisenhower Drive, Paramus, NJ 07652.
- Sig Manufacturing Co., Inc., Route 1, Box 1, Montezuma, IA 50171.





# Modeling a 7.5 cm PaK 40 auf RSO antitank weapon

A conversion that's an ideal introduction to scratchbuilding

BY TERRY SUNDAY

**T**HIS ARTICLE describes how to combine parts of two plastic kits with a little scratchbuilding to create a 1/35 scale model of a little-known World War Two German armored vehicle, the 7.5 cm PaK 40 auf RSO — an antitank gun (Panzerabwehr Kanone) mounted on the robust chassis of the Raupenschlepper Ost, a tractor the German Army developed especially for the Eastern Front. The only parts you'll have to make are for the cab; these are flat and can be cut directly from plastic sheets. The cab is shown assembled but unpainted in Figs. 1 and 2.

This project does present the challenge of trying to make it come out right without the benefit of a lot of reference material. I found only three books that even mention the vehicle and none of the few photos in any of

them are close-ups. I wrote the manufacturer, Steyr-Daimler-Puch of Vienna, Austria, requesting photographs and scale drawings, but the polite reply stated — if I translated it correctly — that all such material was destroyed at the end of the war. So, much of the model is based on conjecture, particularly the smaller details and the interior layout.

**Origin and development of the PaK 40 auf RSO.** Steyr-Daimler-Puch developed the RSO in 1941 to solve the problem of transport on the Eastern Front. The brutal Russian winter, the great distances, roads that turned into quagmires, and a lack of fodder for the horses that were still widely used for infantry transport caused the German Army to flounder even when not facing stiff Russian opposition.

The simple, lightweight, easy-to-produce RSO was designed to take over

the transport duties. This fully tracked vehicle weighed only 3 tons empty and was powered by a standard Steyr 1500A 3.5-liter V-8 engine. Top gear in the four-speed gearbox gave a maximum speed of about 20 kilometers per hour; range was about 250 kilometers. More than 2,700 RSOs were produced from late 1942 until the end of the war.

In August 1943 Steyr-Daimler-Puch proposed to the Waffenamt (Ordnance Department) that the PaK 40 be mounted on the RSO chassis to make a self-propelled antitank weapon. The 7.5 cm PaK 40, produced by Rheinmetall-Borsig, was one of the most effective antitank guns of its day. The Model 40, with a barrel length of 46 calibers (that is, 46 x 7.5 cm, or 345 cm) first saw combat in the summer of 1942. Its armor-piercing shell could penetrate 130 mm of armor plate at 1,000 meters.

The Waffenamt liked Steyr's pro-



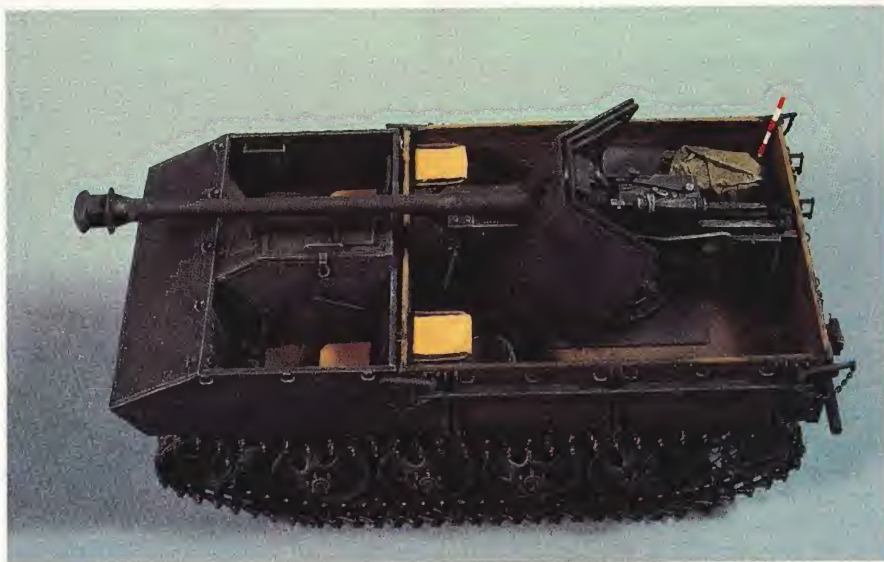
In 1943, the Austrian firm of Steyr-Daimler-Puch suggested mounting the formidable Rheinmetall-Borsig 7.5 cm PaK 40 cannon on the sturdy, reliable Raupenschlepper Ost (RSO) tractor for use by the German Army as an antitank weapon on the Eastern Front; a few of these hybrids had entered service by the end of the war. The author's 1/35 scale model combines a tractor and a cannon kit with a scratch-built cab to create a miniature version of this little-known tracked vehicle.

posals and ordered 50 test vehicles in September 1943. The standard enclosed RSO driving cab was replaced by an angular, open-top, low-profile, lightly armored driving compartment and the PaK 40 was mounted on the cargo bed. The field trials, completed in early 1944, were successful, but only a few of the vehicles were ever issued to operational Panzerjäger units.

**Getting started.** Our project requires two kits: the Peerless/Max Steyr RSO/01 Tractor (No. 3512) and the Tamiya 7.5 cm PaK 40/L46 (No. MM 147). You'll also need a package of Squadron sheet styrene, which should be available at most hobby shops. One package contains all the thicknesses required and you'll have plenty left over. I especially like Squadron styrene because its slightly rough surface provides excellent tooth for paint and looks just like cast steel.

**Building the chassis.** Assemble the Peerless RSO chassis virtually stock, adding only a front registration plate with attachment bolts, a drilled-out exhaust pipe, some dents in the muffler, and stretched-sprue handles to the two access hatches on the front underside.

Two thick cab-locating pins protrude from the top of the chassis — file these off before you assemble the running gear. The front and rear drive sprocket assemblies consist of small parts that don't fit well and are weak, so use lots of cement and let them dry for several days before installing the tracks.



The kit tracks were very tight — the ends didn't come within 1/2" of meeting when I first stretched the tracks around the road wheels and sprockets, so I

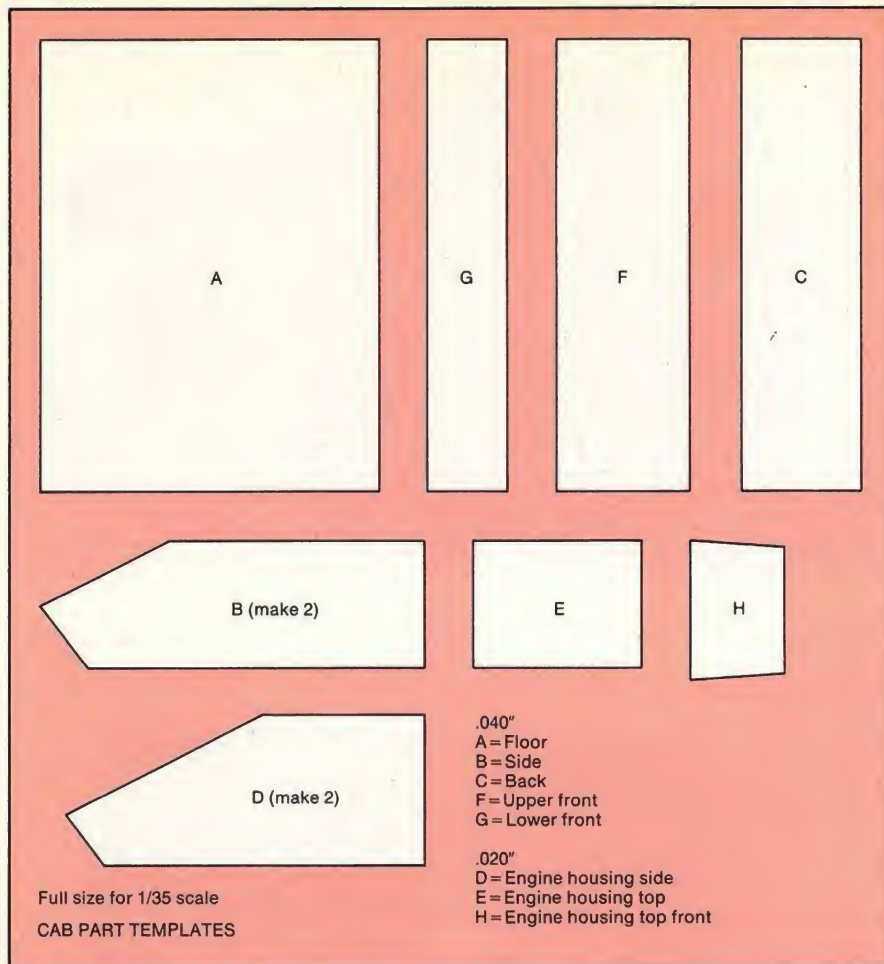
glued track links to each road wheel with cyanoacrylate cement, pulling a little tighter each time, until the tracks finally stretched enough to join at the ends. I also used cyanoacrylate to secure the upper run of track to the tops



**Figs. 1 and 2.** Mounting the cannon on the RSO meant that Steyr-Daimler-Puch had to redesign its driving compartment. The scratchbuilt cab, shown before painting, on the author's model is based on his interpretation of the few available photos of the PaK 40 auf RSO.







of the two inner road wheels for the proper sag, Fig. 3.

There's some question about which way the tracks should face. The box art shows the narrow ends of the links facing in one direction, the instruction sheet has them facing in the opposite direction, and one of my reference photos clearly shows an RSO PaK 40 with the tracks pointed in opposite directions! I mounted the tracks with the narrow end of each link pointed down as it passes over the front sprocket, though if I were to build the model again, I'd mount the tracks with the

narrow end pointed up, which I now believe was the most common practice.

**Painting the chassis.** I painted the chassis by brush with Humbrol German Panzer Grey. (Unless otherwise specified, all paints are Humbrol except for colors like flat black, where any compatible paint will do.) After letting this dry for a couple of days, I went over the chassis with a thin wash of flat black, then dry-brushed it with RLM Grey and Light Grey. Although German armored vehicles in 1943 and 1944 were usually painted a three-color (dark yellow, olive green, and red-

brown) camouflage pattern, I reasoned that noncombat test vehicles might well be painted with surplus stocks of the old panzer gray. My references don't specify any colors for these vehicles, but they don't look camouflaged in the photos.

I picked out the drive sprocket teeth in Pactra Silver to simulate wear and added rusty spots to dents in the muffler with a mixture of Pactra Rust and Silver.

The tracks were difficult to paint because they exuded a thick, oily substance, presumably mold release agent, that caused the paint to adhere poorly. I tried alcohol, turpentine, and soap and water, but nothing completely removed the oily material. Because I had painted the tracks before installation, some of the paint flaked off every time I flexed one while fitting it in position. Much touching up with Pactra Silver and Rust, flat black, and Humbrol German Panzer Grey made the tracks look presentable; a final treatment with Testor Dullcote sealed the finish.

A license plate decal from the kit completed the chassis.

**Assembling the cargo bed.** Before assembling the cargo bed, I shaved off all 16 tie-down fittings from both sides and the tailgate and replaced them with new fittings made from bent stretched sprue. To match reference photographs, I attached jack brackets made from Evergreen plastic strips and shaved bolt heads to the tailgate, but didn't mount the jack because none of my photos showed it in place.

Taking a wild guess, I added a sheet plastic plate to the cargo bed floor for attaching the cannon. The cannon may have been bolted directly to the wooden floor, but it made sense to me to install a "steel" plate to provide a more secure mounting. The plate is 1" x 1 3/8", cut from .020" sheet plastic, and it is centered on the floor. I added four brackets to the floor, two in front of and two behind the mounting plate, to attach the swiveling carriage braces that secured the cannon when the vehicle moved.

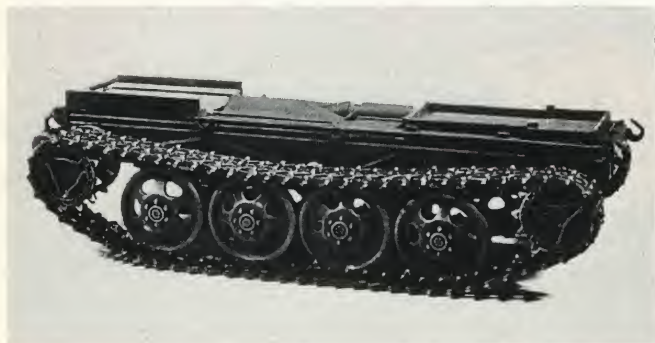


Fig. 3. Terry built the RSO chassis and running gear assembly virtually stock, with only a few details added. The tracks are glued to the two center road wheels to make them sag.

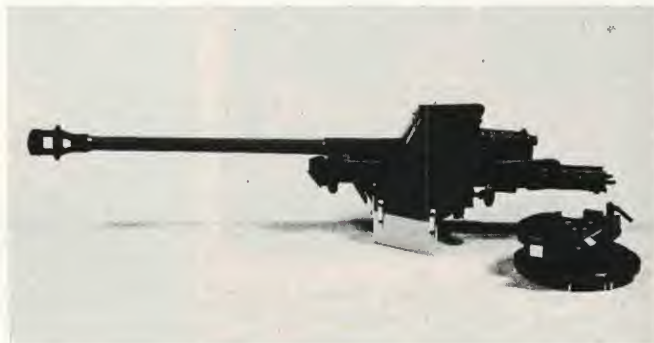
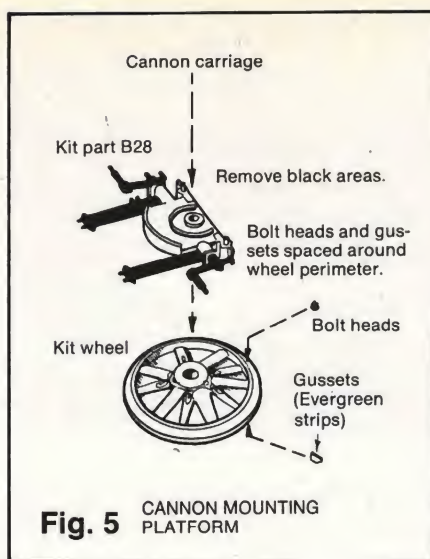


Fig. 4. Terry added two supplementary armor plates, made from .020" sheet plastic, to the PaK 40's shield and detailed them with Evergreen strips and bolt heads.



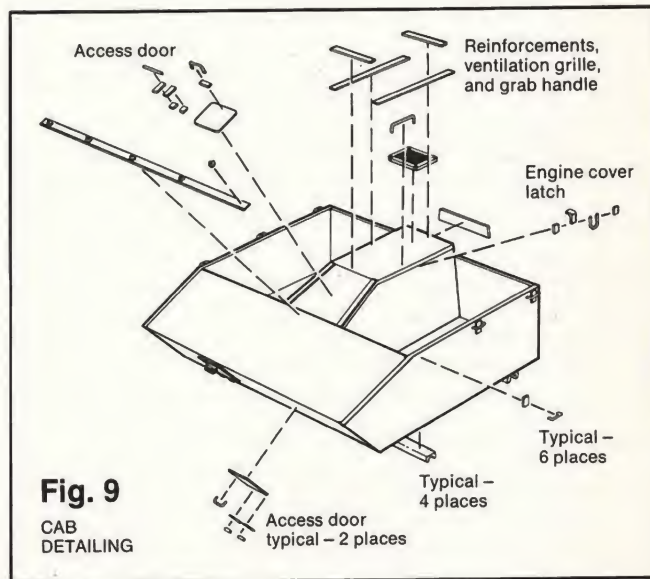
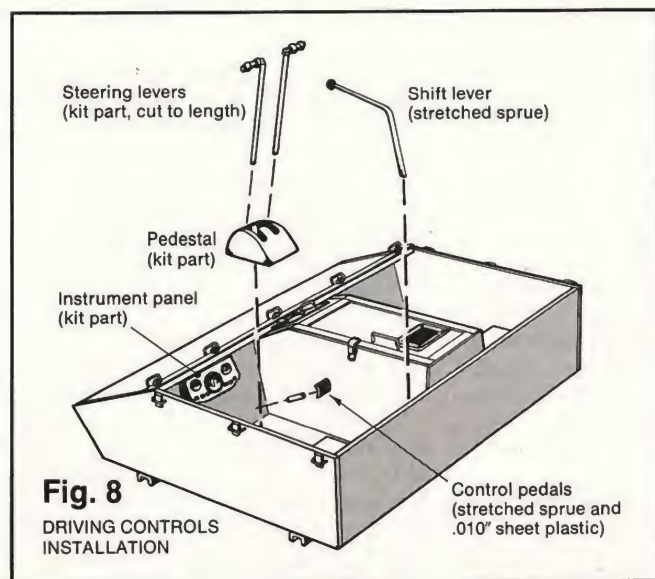
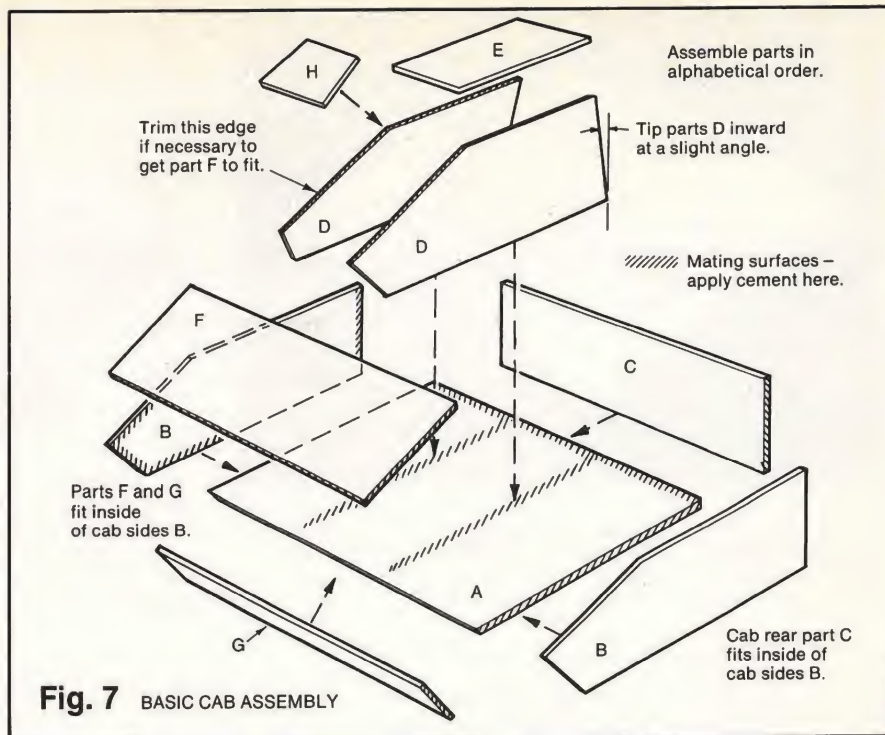


These were surplus parts from the cannon kit.

To complete cargo bed detailing, I added lengths of tiny chain to the side panel latches.

I found that Dark Earth, washed when dry with very diluted Panzer Grey, produced an excellent finish that made the cargo bed floor and sides look like weathered wood. The molded wood grain detail on the parts is superb and this paint combination really brought it out. The side braces, jack brackets, license plate mount, and other hardware were painted Panzer Grey and lightly dry-brushed with RLM Grey and Light Grey.

**Assembling and mounting the cannon.** I built the PaK 40 pretty much stock through Step 6 of the instructions, which covers attachment of the armored shield. My detailing was confined to thinning down some of the handles, brackets, and actuating rods, adding two fittings to the front under-





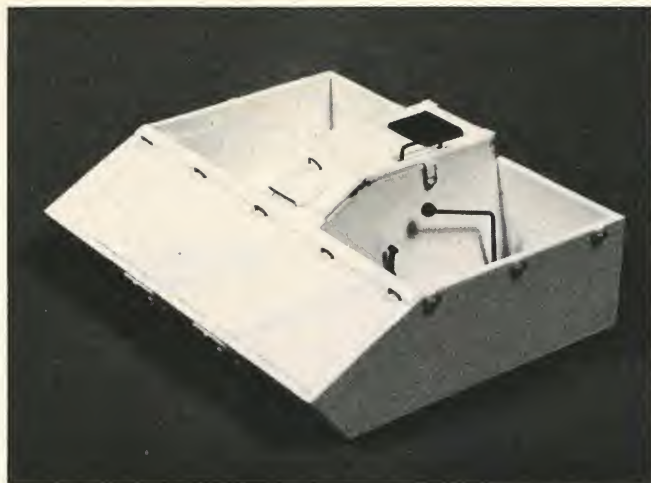


Fig. 10. The cab is .040" and .020" Squadron sheet plastic. The ventilation grille on the top of the engine housing is from the RSO kit. Note the curved gearshift lever, engine cover latch and hinges, and map case on the passenger side.

side of the carriage (for attaching the braces), and building a similar fitting at the rear of the carriage using Evergreen strips. Additional armor plates, cut from .020" plastic sheet and detailed with Evergreen strip brackets and shaved bolt heads, were attached to the bottom of the sloped armor shield, Fig. 4.

The biggest problem with the cannon was devising a way to mount it to the cargo bed. My reference photos show a circular base beneath the cannon, quite different than the standard trail base. My solution was to adapt one of the wheels from the cannon kit. With a little filing to make it sit flat, and some added gussets and bolt heads, the wheel became a passable cannon mounting platform, Figs. 5 and 6.

The kit trail base (Part B28), with the axles and lower shield mounting arms removed, served to attach the cannon to the platform. I don't know how closely this makeshift installation matches the real one, but it looks correct.

I painted the cannon overall with Panzer Grey and highlighted the details by dry-brushing with RLM Grey and Light Grey. The carriage recoil rails were painted silver with a bit of black added to simulate a worn, oily surface.

After the paint dried I test fitted the cannon to the cargo bed and scribed marks to show where the mounting platform fit. The clearance between the carriage and the cargo bed is less than  $\frac{1}{16}$ " front and back, so the cannon must be carefully located. I didn't glue it in place yet, because it would have been in the way while I worked on the cab.

**Building and detailing the cab.** Actual-size templates for the cab are on page 30; Figs. 7, 8, 9, and 10 show how to assemble and detail the cab with kit



Fig. 11. The model features the RSO kit instrument panel with the gauge faces filled with Micro Kristal-Kleer to simulate glass lenses. This liquid resembles ordinary white glue, but dries much clearer. The kit steering levers were shortened about  $\frac{1}{4}$ " because reference photos show them barely protruding above the top of the cab side.

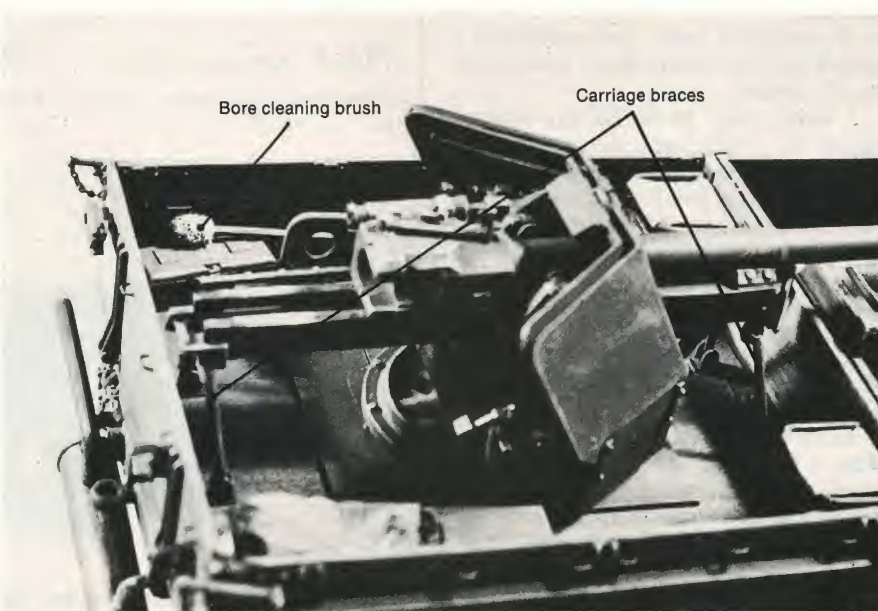


Fig. 12. The PaK 40 is represented with the carriage braces fixed in place, securing the gun for transport. The bore cleaning brush rests on the side of the cargo bed.

parts, stretched sprue, and bits of sheet styrene.

Panels to close off the front of the driver's and passenger's footwells completed the basic interior structure. I have not provided templates for these pieces because their shape depends on how the other interior parts are put together; this will be different on each model. Just cut the pieces a little bigger than necessary and trim them to fit tightly by trial and error. It's important to get a perfect fit on these panels, because they are recessed under the top plate and you can't get to them to fill gaps with putty.

The seats came from an Ertl Demag D7 half-track kit. Before installing them, I built up shallow mounting platforms on the rear of the cab floor. The

right platform extends from the outer cab wall to the engine housing, but on the left side the platform stops about  $\frac{1}{10}$ " short of the engine housing to allow room for the gearshift lever.

I assumed that Steyr-Daimler-Puch would have used the same engine, transmission, steering mechanism, and instrument panel from the standard RSO. This can't be too far from the truth, for if 50 of the antitank vehicles were built in a month's time, the modifications could not have been extensive.

Thus, my layout of the driver's position is the same as in the standard RSO, including the bent gearshift lever, the two pedals on the floor, and the steering levers in front of the driver's seat, Fig. 11. I used the kit steering levers, shortened to fit, but scratchbuilt





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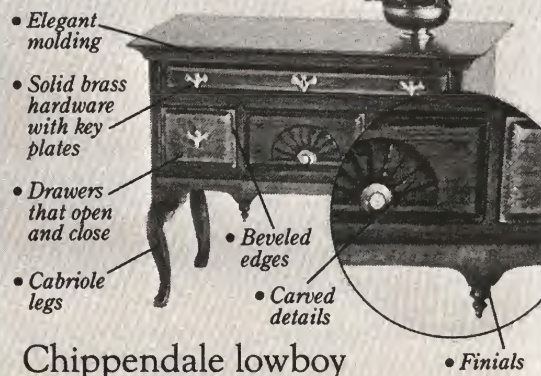
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1. Attach sprue end to kit cleaning rod.

2. Coat end with liquid cement.

3. Dip in shredded-foam diorama "grass."

4. Dip in any light gray paint.

**Fig. 13** MAKING A BORE CLEANING BRUSH

the pedals and gearshift lever because the kit parts were too thick.

I also used the kit instrument panel. After painting the gauge faces black and picking out markings with light gray, I filled the faces with Micro Kristal-Kleer and attached the panel to the driver's footwell plate. The passenger side looked a little bare, so I put a small map case on the cab wall.

The outside of the cab was detailed next. I ran an Evergreen strip across the top of the upper sloped panel and spaced five bolt heads across it. Two access panels with hinges, handles, and latches were attached to the lower front cab plate. Eleven tie-down fittings, similar to those on the cargo bed, were added around the upper edge.

Finally, I positioned the cab on the chassis, evened it up from side to side, and glued four Plastruct U-beams underneath, butting them against the chassis rails. After the glue dried, I trimmed the excess flush with the cab walls. I had to file a little off the top of the chassis transmission and thin out the bottom center of the cab floor to get the cab to sit flat on the chassis rails.

I painted the cab with Panzer Grey, then dry-brushed it with RLM Grey and Light Grey and applied a light dusting of tan and brown pastel chalk on the cab floor in front of the seats.

The last major assembly step was to glue the cannon in place, carefully centering it on the cargo bed floor.

**Final detailing.** I ran four braces from the floor brackets to the front and rear cannon carriage fittings. These braces restrained the cannon during transport, then were folded down out of

the way to free the carriage for firing, Fig. 12.

On the front wall of the cargo bed, I added two folding seats. These are also based on guesswork, but some photos show what appears to be a folding framework on either side of the cannon and the vehicle specifications say the crew capacity was four men, so I assumed the two additional seats were provided in the cargo bed. The frames are stretched sprue; the canvas seat material is tissue, soaked in diluted white glue.

A toolbox from the Demag D7 kit, a dented Tamiya bucket with stretched sprue handle, and a 7.5 cm ammunition box from the PaK 40 kit were placed in the cargo bed. The three-piece cleaning rod was adapted from cannon kit parts modified as shown in Fig. 13.

The tarp is tissue soaked in diluted white glue, wrinkled and draped over the ammo box, and then painted green with lighter green highlights.

The red-and-white striped rod leaning in the corner of the cargo bed is an aiming stake used for sighting in the cannon; I included it to provide a bit of color.

**FSM**

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<b>SH-60B Seahawk</b> \$ 6.37 <b>F-14 Tomcat</b> 6.37 <b>YF-16 CCV</b> 4.12 <b>S-3A Viking</b> 6.37 <b>IAI Kfir</b> 4.50 <b>F11F-1 Tiger</b> 4.12 <b>F-15B Eagle</b> 4.87 <b>P-47D (Razor)</b> 3.19 <b>P-40N Warhawk</b> 2.25 <b>F6F-3/5 Hellcat</b> 2.62 <b>F4U-1D</b> 4.12 <b>F4U-1 Corsair</b> 4.12 <b>SR-71</b> 7.50 <b>A-10A</b> 6.37 <b>Mig-23S</b> 4.12 <b>EA-6B Prowler</b> 6.37 <b>F9F-2 Panther</b> 4.50 <b>F9F-8 Cougar</b> 4.12 <b>B-17G</b> 8.25 <b>P-40 Kittyhawk</b> 3.19 <b>P-40N Warhawk</b> 2.25 <b>Mig-25 Foxbat</b> 4.87 <b>Harrier GR.1</b> 4.50 <b>F-20 Tiger Shark</b> 4.50 <b>Ki48 (Lily)</b> 5.44 <b>Mitsubishi F-1</b> 5.44 <b>Mitsubishi F-2</b> 5.44 <b>F-8E Crusader</b> 5.44 <b>Blue Impulse T-2</b> 5.44 <b>F-15J Eagle</b> 5.44 <b>AH-64 Apache</b> 4.12 <b>Jaguar GR.1</b> 4.12 <b>Weapons Set 1</b> 3.57 <b>Weapons Set 2</b> 3.57 <b>Weapons Set 3</b> 3.57 <b>Weapons Set 4</b> 3.57 <b>Weapons Loading Set 5</b> 3.57 <b>Aerospace Ground Equipment Set 6</b> 4.50 <b>T-33A</b> 2.44 <b>SOC-3 Seagull</b> 2.44 <b>E-7K1 All Type 94 Floatplane</b> 4.12 <b>RF-101C Voodoo</b> 4.50 <b>Jake E13A-1 Floatplane</b> 4.50 <b>P-40N Warhawk</b> 4.50 <b>RA-5C Vigilante</b> 5.44 <b>F-4F Phantom</b> 5.44 <b>F-4E Phantom</b> 4.87 <b>Betty w/Ohka</b> 10.95 <b>GBN1 (Rita)</b> 10.95 <b>P2V-7 Neptune</b> 14.99 <b>A-7A Corsair</b> 4.12 <b>A-6A Intruder</b> 4.44 <b>Me Bf 109E</b> 2.25 <b>Me Bf 109G</b> 2.44 <b>Raiden Jack</b> 3.19 <b>UH-1D Iroquois</b> 3.19 <b>Jaguar GR.12</b> 2.44 <b>F-15C w/Stores</b> 4.87 <b>A-4E/F Skyhawk</b> 2.62 <b>F-106A</b> 5.44 <b>P-38 J/L</b> 4.12 <b>Spitfire Mk1</b> 2.44 <b>P-51D Mustang</b> 2.44 <b>Ki43 Oscar</b> 3.19 <b>Ki84 Frank</b> 3.19 <b>Ki44 Tojo</b> 2.44 <b>Ki61 Hen Tony</b> 2.44 <b>Zero Type 22</b> 2.44 <b>Zero Type 32</b> 2.44 <b>Zero A6M5</b> 2.44 <b>FW 190 A-5/7</b> 2.44 <b>FW 190 D-9</b> 2.44 <b>He 51A1</b> 2.44 <b>Mirage F.1C</b> 4.50 <b>Sea Harrier FRS</b> 4.50 <b>OV-1A Mohawk</b> 4.12 <b>OV-1B Mohawk</b> 4.12 <b>Shidenkai George</b> 3.19 <b>Raiden Jack</b> 3.19 <b>Ki15-1 Babs</b> 3.19 <b>B5N2 Kate</b> 3.19 <b>Type 99 Sonia</b> 3.19 <b>Type 97 Nate</b> 3.19 <b>P-3C Orion</b> 17.50 <b>F-16E</b> 8.95 <b>Mitsubishi T-2 CCV</b> 6.75		<b>1/48 Scale</b> <b>F-105D</b> 5.79 <b>F-101B Voodoo (2 seat)</b> 5.79 <b>F-4J Mig Ace</b> 5.79 <b>OA-4M Skyhawk</b> 3.99 <b>F-5 Tiger</b> 3.99 <b>F-100 Sabre</b> 3.99 <b>Mirage 2000</b> 3.99 <b>F-86 Sabrejet</b> 3.99 <b>F-80 Shooting Star</b> 3.99 <b>AD-6 Skyraider</b> 3.99 <b>A-1H Skyraider</b> 3.99 <b>V/Stol Harrier</b> 3.99 <b>B-24D Liberator</b> 10.87 <b>B-29</b> 10.87 <b>F-4C Phantom II</b> 5.79 <b>F-15 Eagle</b> 5.79 <b>F-14A Tomcat</b> 5.79 <b>F-111 Aardvark</b> 5.79 <b>F-4J Phantom</b> 5.79 <b>F-105G Wild Weasel</b> 5.79 <b>A-18 Attack Fighter</b> 5.79 <b>F-105F</b> 5.79 <b>F-106 Dart</b> 5.79 <b>B-25J Mitchell</b> 6.37 <b>B-17G</b> 10.87 <b>F-84 Thunderstreak</b> 3.99 <b>F-104C</b> 3.99		<b>1/32 Scale</b> <b>Blue Thunder Helicopter</b> 5.25		<b>1/144 Scale Missiles</b> <b>U.S./U.S.S.R. 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## SERGEANT, U. S. 82ND AIRBORNE (ALL- AMERICAN) DIVISION, D-DAY, 1944

BY BILL TILTON  
ARTWORK BY THE AUTHOR

**I**N AUGUST 1942 the first two U. S. airborne divisions, the 82nd and 101st, were formed. They were destined to become two of the most active—and most famous—American units of World War Two.

The 82nd fought in Sicily, Italy, France, the Netherlands, and Germany, and made four combat jumps. Under the command of Major General Matthew Ridgway it was one of the three Allied airborne divisions dropped into the Cotentin Peninsula of Normandy in the predawn hours of June 6, 1944. Little more than three months later, under Brigadier General James M. Gavin the 82nd took Nijmegen, the Netherlands, in the airborne phase of the Operation Market-Garden thrust toward the Rhine in September 1944.

This sergeant wears full combat dress for the D-Day jump. The helmet features the distinctive double strap with a molded-leather chin cup, and a first-aid packet is fastened to the camouflage netting. His clothing includes an oversize jacket with huge, expanding pockets, and loose-fitting trousers—the famous “baggy pants”—also with expanding pockets. Over the jacket he wears a bright yellow Mae West inflatable life vest.

His complete jump gear weighs at least 100 pounds. The weapons shown are the .30 caliber M1A1 carbine with folding stock and the .45 caliber service pistol. A fighting knife is tied to the right calf, and an entrenching tool is out of sight on the left hip. The canteen is behind the pistol holster, and a 25’-50’ jumper’s rope is worn in front of it.

In his left hand the sergeant holds the snap hook and a bight, or fold, of the static line to the main parachute. His left forearm is resting on the reserve chute, and a musette bag for provisions and a few personal belongings is worn below the reserve.

This jumper is typical, but photos show numerous variations in the ways individuals, regiments, and divisions wore equipment, and even what equipment was carried.

**FSM**







Loaded down with two parachutes and full combat gear, Bill's 90 mm paratrooper calmly waits to enplane. In a few hours he and thousands of others will be dropped into Normandy as part of the greatest invasion in history, D-Day, June 6, 1944.

# Airborne — all the way!

## A 90 mm paratrooper conversion

BY BILL TILTON

**P**ARATROOPERS have more than casual fascination for me, since when I retired from the Army after 31 years of service, I'd spent most of them in some airborne capacity. Early in 1982 I wrote Pat Bird, who sculpts the Series 77 90 mm figures, recommending that he produce a parachutist figure complete with all jump gear. The results far exceeded my expectations. In short order Pat added the Sergeant, U. S. Army Paratroops, 1944, figure number A/24, to his "The Americans" series.

While the figure is an outstanding example of a master sculptor's art, like many modelers I like to make a few personal modifications — even to a magnificent miniature. This article explains my changes.

**Getting started.** My first alteration was to remove the canteen from the en-

trenching tool cover. This is not a typical airborne placement, since having the canteen there could cause hip injury, or could foul an exiting jumper's lines.

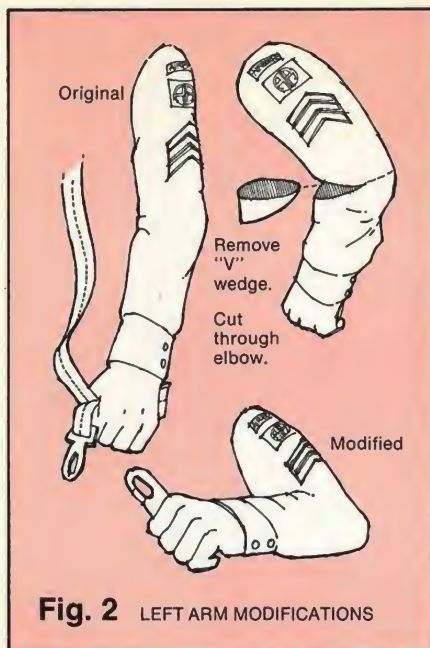
First fill the dimple for the canteen on the entrenching tool cover with your favorite putty. When the filler is dry, file and sand it smooth, matching the engraved fabric weave as closely as possible. I used acrylic dental repair resin, available at dental supply houses, as the filler here. This material consists of a liquid and a powder, which when combined rapidly form a hard surface which can be worked with knives, files, or a hand-held motor tool.

Next, grind or file away the bowl-shaped stud on the back of the canteen. Figure 1 shows the preferred position for the canteen on the cartridge belt behind the service automatic. I epoxied mine there, since that's where I always wore mine, except in arctic jumps,



Fig. 1. Changes to the Series 77 figure are relatively minor. Most obvious are the folding-stock carbine replacing the sub-machine gun, the repositioned canteen, and the change to the left arm.





**Fig. 2** LEFT ARM MODIFICATIONS

when it was stowed in the pack or musette bag.

**Modifying the left arm.** Using a jeweler's saw or razor saw, carefully cut the left hand from the left arm. Next cut a "V" in the left arm opposite the elbow, Fig. 2. The metal doesn't bend, so cut the arm completely through and then glue it back together in the new position. I used Blu-tack reusable adhesive to hold the arm in the bent position while I applied Hot Stuff super glue to the joint. This is a situation where "instant" is still too slow, so I used Zip Kicker accelerator spray.

Next, fill the gap at the elbow with epoxy putty, shaping creases in it while soft. Refer to photographs or study your own arm in a mirror to see what wrinkles look like when an arm is in that position. My wife often models such things for me.

When the epoxy is dry, finish it with rifflers, small files, and fine sandpaper. I used a hand-held motor tool with several rubberized abrasive cones and points for this, and the work went quickly. The fine points are handy because with them you can sand or buff very small and complex areas.

I used a coarse Merit Power-Lock 1½"-diameter sanding disc to dress the surfaces where the hand had been cut from the wrist. That done, the next task is to change the way the figure holds the snap hook and static line. Carefully remove most of the original snap hook from the left hand. I used carbide bits in the motor tool to cut away the old snap hook and prepare the hand for the replacement, Fig. 3.

**A new snap hook and static line.** The snap hook is an important item. It is on the free end of the 15' webbed canvas static line, the other end of which is

secured to the panel assembly cover on the back of the main parachute. Each jumper holds the hook in his hand until ready to jump, then snaps the hook onto the overhead cable and goes.

The snap hook that comes with the figure was used for early military parachutist training, and I replaced it with the kind shown in Fig. 3. My reference was an illustration in TM 1-440, Parachutes and Aircraft Clothing, War Department, June 1945. This snap hook was roughly 4" long, there being some variation in sizes from different manufacturers. The hook was about ⅜" thick and was made of pressed metal that was a dull aluminum color. I made the replacement snap hook from part of an old Revell 1/32 scale Skyraider bomb rack.

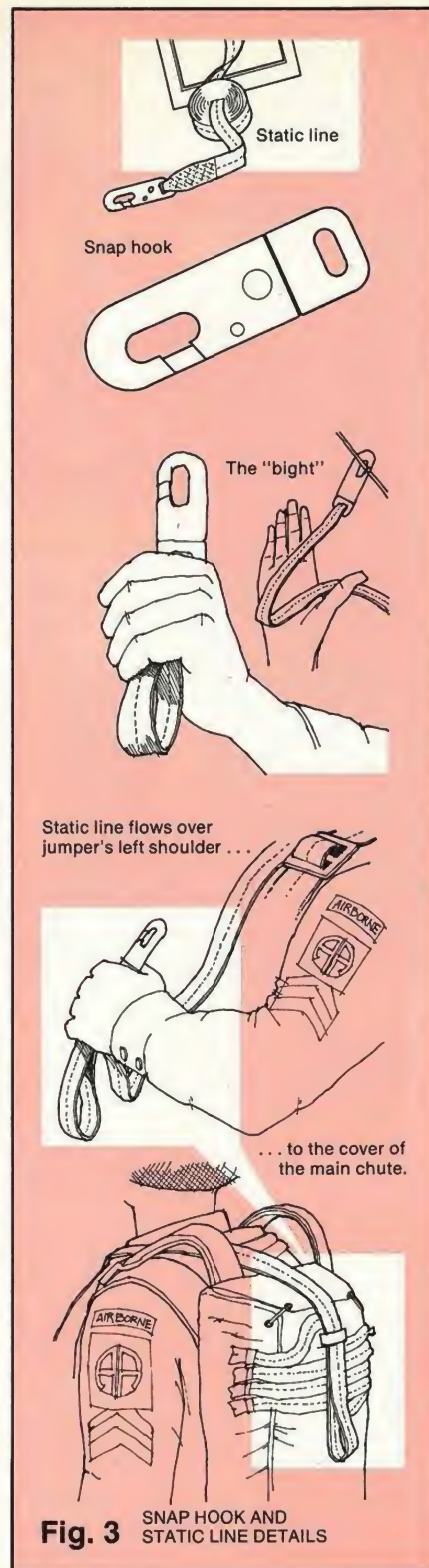
There is more than one place where trained jumpers keep the hook, including the pack attachment "D" ring on the harness, the left carrying handle on the reserve, or held securely in the hand, as on my figure. Note that the hand holds the snap hook in a bight — a fold in the static line.

Using the cardboard static line from the kit as a template, make a new one from thin sheet lead (mine came from Santos Miniatures, P. O. Box 4062, Harrisburg, PA 17111), folded upon itself to create a double thickness. Pry open the lead and flow in Hot Stuff, then fold the plies together and rub them with the back of a spoon. When dry, cut the lead to match the template. The lead trims neatly with a scalpel, single-edge razor blade, craft knife, or scissors, and is easy to manipulate into believable curves and shapes. The static line flows along the front of the arm, and over the left shoulder to the top of the main parachute.

**Assembling the figure.** Before assembling any figure, every part needs to be examined carefully, preferably under magnification, for flash and mold lines. To eliminate these, scrape, file, or grind them away with a motor tool, then polish all parts with fine steel wool.

After cleaning the parts, use epoxy and fast-setting cyanoacrylate to assemble as much of the figure as you can reasonably paint. I assembled most of the figure, but painted the weapon and the combined reserve and musette bag casting separately. This allowed better access to the numerous parachute harness components.

Temporarily cement the casting for the reserve chute and musette bag into the recess on the front of the figure, then glue the modified left arm to the body. I mixed 5-minute epoxy, applied it to both pieces to be joined, and allowed the glue to almost set before pressing the pieces together. I then inverted the figure and flowed Hot Stuff



**Fig. 3** SNAP HOOK AND STATIC LINE DETAILS

onto the armpit, then sprayed it with accelerator. I immediately pressed some Blu-tack reusable adhesive around the joint to hold it until the epoxy set. This technique effectively gives me an extra hand. Make sure the modified arm rests convincingly on top of the reserve.

I mounted my figure on a wood base by removing the lugs cast on the boots and drilling holes through the soles



and about  $\frac{3}{4}$ " into the legs. I glued brass rod of matching diameter into the holes with 5-minute epoxy, then cut the rod off with about  $\frac{3}{8}$ " projecting. Drill matching holes in the base now, so that later, when you add the figure to the base, you'll have a perfect fit.

**Scratchbuilding an M1A1 carbine.** I elected to replace the Thompson supplied with the figure with a folding-stock M1A1 carbine. Though never popular, this model carbine was carried by far more troopers than was the sub-machine gun. If you want to do the same, start by removing the Thompson from the trooper's right hand with a jeweler's saw.

Figure 4 shows the M1A1 in 90 mm scale. I used brass tubing, epoxy putty, fine wire solder, plastic, and sheet lead, and found that its construction required patience but not unusual skill. Make sure that the finished weapon fits into the right hand which had previously gripped the Thompson. Next, I added a scale  $\frac{3}{8}$ "-diameter jumper's rope, hooking it to the right side of the harness near the reserve.

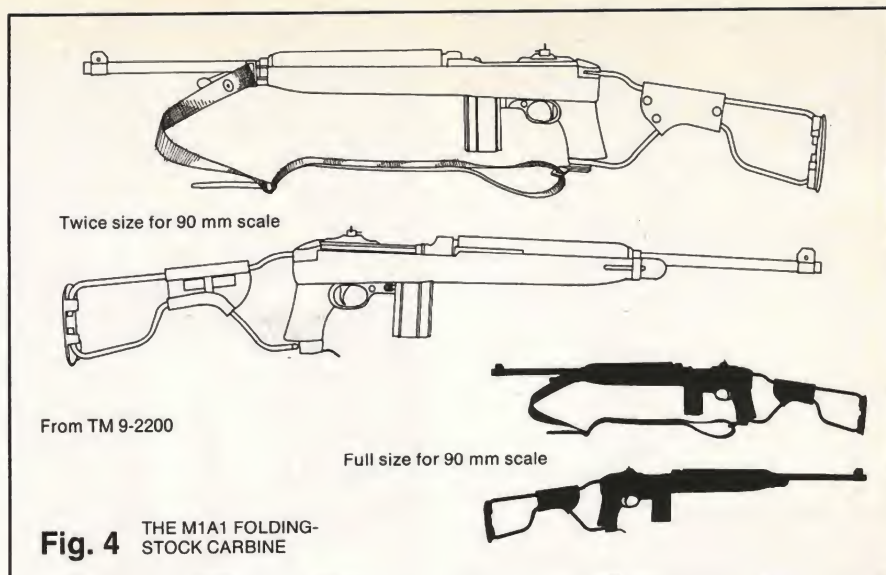
The last change I made to the figure was the most difficult of all: opening the collar. Regulations prescribed buttoning the collar, but the figure looks more battle-ready with it open. First I ground away the existing collar, then carefully removed the jacket front. I opened up the chest area with engraving tools, rifflers, and abrasive cones, and made a new collar from sheet lead, adding horizontal folds and typical collar creases, Fig. 5. The collar was super glued in place and blended into the figure with epoxy putty. Finally the head, which had been set aside, was glued in place.

**Priming techniques.** After a careful inspection and some additional burnishing with fine steel wool, I cleaned out loose hairs, dust, and steel wool shreds with a Beseler Dust Gun, available at most photo stores. This handy tool provides a strong blast of clean air pressure for blowing away dust and foreign matter.

Bob Knee, who paints the Series 77 figures for the company's ads, developed the priming technique that I used on this figure. Essentially, you'll need Imrie/Risley metal primer, Floquil M9 Primer, thinners, No. 1 and 2 flat sable brushes, and an airbrush.

Start by carefully brushing the figure with I/R primer, trying to make each stroke follow the form. Complete one area before proceeding to the next, since this primer dries quickly and you don't want to leave brush strokes. When the entire figure has dried, examine it closely under strong lighting. Correct any deficiencies and re-prime.

Next, thin Floquil M9 Primer with Dio-Sol for airbrushing. I often add a



little acetone to speed drying. Gently mist this over the I/R primed figure. The Floquil Primer is a lighter shade of gray, and it enhances the appearance of the figure by providing an approximation of a light-and-shadow effect, Fig. 6.

From this point on, the best advice on handling your figure while painting is "don't." I use a medium-size surgical hemostat, clamping it to the brass pins in the feet. The hemostat can then either be hand held or clamped in a vise.

**Underpainting, then flesh colors.** I underpainted the figure with Winsor & Newton alkyds, using lighter values of the final colors. It's always easier to paint darker colors over lighter ones, and the lighter colors underneath mean the final paint layer won't turn dark sometime in the future. Alkyds dry much faster than oils; here in Virginia

they dry to the touch in an hour and are absolutely hard in 18 hours.

I started painting with the face and hands, using what I call the "Old Master's skin formula," a combination of titanium white, burnt umber, yellow ochre, light red, and ultramarine blue (you may substitute burnt sienna or cadmium red light for the light red). I always think of the beginning proportions in terms of common green peas: To one whole pea of white add  $\frac{1}{2}$  pea of umber,  $\frac{1}{3}$  pea of yellow ochre,  $\frac{1}{6}$  pea of ultramarine blue, and  $\frac{1}{6}$  of the red. Mix these colors using a small painting knife or spatula to make a basic skin color which you can adjust lighter, darker, warmer, or cooler.

I recommend a very simple and effective approach for painting faces. Study the paintings of recognized masters of representational figure and portrait



Fig. 5. Bill ground away the buttoned-up collar, then added new collars from thin sheet lead. It sounds simple, but was one of the most challenging aspects of the conversion.





**Fig. 6.** The assembled figure, primed and ready for painting. Bill uses two gray primers, one light and one dark, to develop a light-and-shadow effect even before applying color to the figure.



The figure comes to life after painting, even before the carbine, reserve parachute, and musette bag subassemblies are added. A Master Parachutist himself, author Tilton brought empathy as well as ability to this modeling project.



painting, then try to duplicate what you see. Look at photos, too — picture magazines like *National Geographic* and *Life* are particularly fine sources of what people actually look like. Once you've studied the effects you're out to achieve the procedure isn't complex: Apply an overall skin tone, then add darker tones in the shadows and lighter tones for highlights.

While the skin paint is still moist on the face, add just a touch of red — far less than a pinhead's worth. Clean and dry your brush, then use it to blend the red into the upper cheek areas and nose. If you add too much red, lighten and blend it with white or subdue it with a small bit of terre verte or chrome oxide green.

A light touch of burnt sienna between the lips, blended up and down, yields a natural look. After this has dried, use burnt umber on the separation line between the lips for more definition. Study carefully how fine artists make lips look convincing and you'll probably notice they have added a small touch of burnt umber to the corners of the mouth and perhaps a touch in the middle, between the upper and lower lips. Naples yellow is an excellent color for facial highlights.

**Coloring the uniform.** Now begin working on the uniform. Mix raw umber, Naples yellow, Payne's gray, and white for the parachute harness webbing. Yellow ochre, ivory black, and just a touch of burnt umber will give you a good basic olive drab for the waistband, main parachute, and re-

serve. Adding varying amounts of white and black (ivory black for warm; lamp black for cool) to this basic O. D. yields considerable color variation; adding cadmium yellow deep, Naples yellow, sap green, terre verte, and raw umber yields an impressive range of colors. Take an hour to experiment with these subtleties of olive drab, painting them on a sheet of typing paper.

The water-repellent cloth of the coat and trousers was light tan. The basic mix is Naples yellow, ivory black, raw umber, white, and a small touch of yellow ochre. For the jump boots use both burnt and raw sienna with white and burnt umber to make a russet color. Paint the helmet dark olive, add highlighting and shading, and when dry, dry-brush olive lighted with Naples yellow over the netting. Once that is dry, flow a very thin mixture of raw umber, ivory black, and mineral spirits over the netting, allowing it to settle in the recesses, then wipe the dark stain off the raised netting.

**Colors for accessories.** I painted the musette bag light khaki (later they were dark O. D.). The knife scabbard is O. D., and the handle is russet leather. The entrenching tool matches the knife scabbard.

Mae Wests were quite close to cadmium yellow; lighten that with Naples yellow, darken it with raw and burnt umbers. The inflating tubes are black, and all metal parts of the equipment other than parachutes and harness are a bronzy black made by mixing Rose Antique Gold powder with ivory black,

adding just a touch of burnt sienna. Metal parts on the parachutes, webbing, and harness are aluminum, made by combining silver with Payne's gray, ultramarine blue, and raw umber to obtain suitable darks. Use the full-strength silver for highlights and the overall appearance is convincing.

Instead of painting the 82nd Airborne patch directly on the figure, I made a decal. Use cadmium red and cobalt blue for this, and for the American flag invasion patch on the right sleeve. Keeping the dots that represent the stars uniform is the key here.

Burnt umber is the basic color for the wood gunstock. For the look of dark, sweat-stained wood, rub an Ebony No. 6325 black graphite pencil over the paint, then buff with a cotton swab.

**Time to hook up!** When the main figure and all the separate parts are painted to your satisfaction, assemble the parts and mount the figure on your choice of base. Then hook up with this figure and enjoy it in the best airborne tradition . . . all the way! **FSM**

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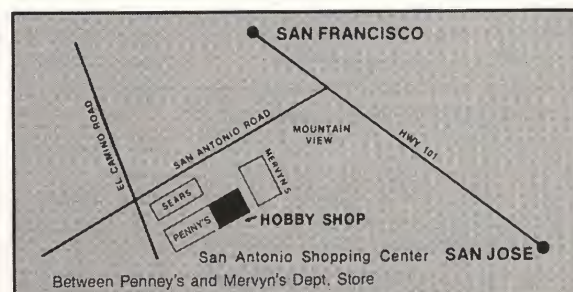
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Empty tin cans have littered battlefields since the 1860s. Cans that are not immediately discarded often become drinking cups,



cooking pots, or even trip wire signals. These are scenes on Bob Collignon's 1/35 scale WWI dioramas.

# Making tin cans for dioramas

Techniques you can also use for buckets, drums, and other cylindrical containers

BY RICHARD WEHR

**R**ATIONS packed in tin-plated sheet steel cans first appeared during the American Civil War and the cans have been with us ever since, but when was the last time you saw a tin can in a diorama? I can only think of once — at least until Bob Collignon's dioramas came on the scene — and suddenly that familiar old tin can started showing up in the most natural places. Tin cans scattered about individually, heaped into piles, or put to other uses greatly enhance the realism of most miniature battlefield scenes.

Make tin cans you say? Too hard, too tedious, too inaccurate! Think again fellow modelers; outlined below is a simple, fast, and accurate technique. I'll describe 1/35 scale cans but the method works just as well for other scales and it's good for making any sort of cylindrical object — buckets, drums, and artillery shell cases and containers.

You might be tempted to make tin cans from sections of wood dowel, but I don't recommend that you do because it's hard to make scale rims and seams on wood. Also, wood doesn't crimp, dent, and crumple like metal.

**Rolling the cylinders.** Begin making 1/35 scale cans by rolling unwrinkled household aluminum foil over a piece

of 1/8" Plastruct tubing, overlapping the edges of the foil a little. The aluminum foil strip can be as long as the tubing.

Glue along the seam with Plasti-Zap or any other cyanoacrylate cement, Fig. 1. Be careful not to get glue on the tubing or you won't be able to remove the foil later.

Set the tubing and foil aside temporarily and start making lids. Obtain a circle template and a piece of 1/8" brass tubing to use as a punch. Place a 1"-square sheet of aluminum foil on the template, position the brass tubing over the template's 1/8" hole, and press down, forcing the punch through the foil, forming disks, Fig. 2. Make a good supply of lids because you won't believe how many you'll drop!

Before removing the rolled foil from the Plastruct tubing, simulate the fairly prominent soldered seam that's found on nearly all tin cans by gently running the back of a knife blade along a ruler held along the less prominent seam already formed by the exposed edge of the rolled foil, Figs. 3 and 4.

Now cut sections of the rolled foil to whatever height you want for any particular can. Many cans are about a third taller than their diameter, so you'll probably cut most of the sections 3/16" or so in 1/35 scale. Place a sharp No. 11 knife blade against the foil and roll the blade until the foil is cut

cleanly, Fig. 5. Slide this section off the tubing.

**Adding the lids.** Carefully place a rolled section on a flat surface and prepare to add the lids. With a fine tweezers, pick up a lid you prepared earlier, dip one edge into a drop of cyanoacrylate cement, and place the lid in the hole at one end of a section, Fig. 6. Set this aside to dry and move on to the next section and lid, assembly line style.

Flip the cans over and place lids on the other end of each can. Position some lids flat for unopened cans and others twisted up for opened or used cans. After you get rolling, you can make a diorama's worth of cans in less than an hour.

Be careful not to crush the sides of neat, unopened cans. For used, discarded cans, crush or dent the sides with tweezers or a knife blade.

Apply primer, then paint or label the cans as appropriate. Most military cans have been painted dark, flat colors (often dull green). For civilian cans, simulate printed labels with cigarette paper or frisket.

Examine photos for ideas about placement, keeping in mind that wars aren't neat and that trampled cans will be appropriate for most scenes.

Now what we need is a scale can opener — well, maybe later! **FSM**





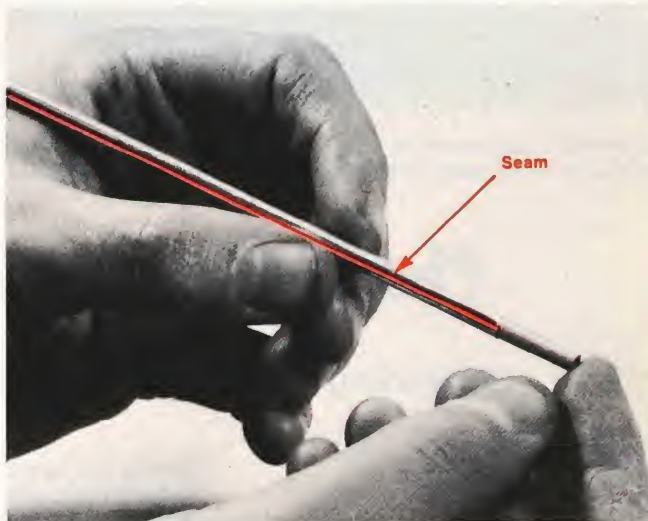
**Fig. 1.** Start by wrapping unwrinkled household aluminum foil around a  $\frac{1}{8}$ " Plastruct tubing mandrel. Apply cyanoacrylate cement along the seam.



**Fig. 2.** Form the lids by punching aluminum foil disks with the help of a circle template and a piece of  $\frac{1}{8}$ " brass tubing.



**Fig. 3.** As the full-size can reveals, almost all tin cans have a fairly prominent seam running from top to bottom. Represent this seam by pressing the back of a knife blade along the length of the foil while it is still on the mandrel.



**Fig. 4.** The seam is shown, much exaggerated, in color.



**Fig. 5.** Cut sections of the rolled and glued foil with a sharp knife and slide each section off the tubing. Many cans are about a third taller than their diameter, so cut accordingly.



**Fig. 6.** The aluminum foil disks you prepared earlier become the lids, which may be closed at both ends for sealed cans, or left partially open at one end.





Grumman's graceful F11F-1 Tiger saw limited squadron service due to its short range and limited capabilities — only 199 were

built. However, it served as the mount for the Blue Angels for 11 years, from 1958 to 1969. It was replaced by the F-4J Phantom II.

# Modeling a long-nose Tiger

Converting Lindberg's 1/48 scale prototype to a colorful F11F-1

BY GIL HODGES

**M**ODELING IN 1/48 scale can be both rewarding and frustrating — the detail and accuracy of recent 1/48 scale kits are truly amazing, but this scale doesn't provide the variety that 1/72 scale does. Many aircraft of the 1930s and 1950s just don't exist in 1/48 scale. With a few exceptions, the choice is limited to old kits, vacuum-formed kits, or scratchbuilding.

Since my interests lie in those limited areas, I wanted to convert an old kit into a more accurate, better-detailed model. The Grumman Tiger's sleek lines and colorful markings have always appealed to me, so I chose it as my next project. The F11F-1 (redesignated F-11A in 1962) saw limited front line carrier duty; its chief claim to fame was its 11 years of service with the U.S. Navy Blue Angels aerial demonstration squadron.

**Old made new.** Despite the box top, the Lindberg 1/48 scale kit (No. 2332) is of the prototype Grumman F9F-9 Tiger which differed from the production short- and long-nose F11F-1s. The first step was to obtain a set of Detail &

Scale's 1/48 drawings. Drawings of the cockpit, landing gear, ejection seat, and gun bay are included with the usual four views of the aircraft. I borrowed a 1/72 scale Minicraft-Hasegawa F11F Tiger (No. D17) from a friend — having a three-dimensional object is a big help when trying to decide how to correct a model.

The next step was to compare the kit parts to the drawings. There were lots of changes to be made, Fig. 1, including reworking the nose, afterburner section, vertical tail, and landing gear and gear wells, and rebuilding the housing for the tail hook. I'd also have to make new splitter plates, cannon ports, and shell ejector housings, add leading edge extensions to the wing roots, drop the trailing edge flaps, reshape the wing fences, and add new actuator bumps to the horizontal stabilizers. The cockpit would have to be scratchbuilt and the canopy reworked to production style.

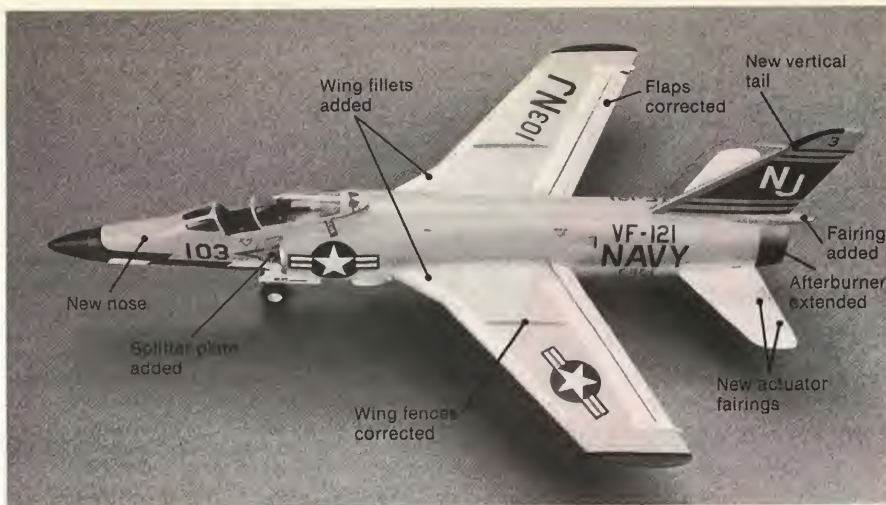
**Fuselage.** I started the conversion by sawing off the nose at the rear of the windshield, Fig. 2, and the vertical tail, discarding both. Next, I opened the air scoops on the upper fuselage sides by

grinding down the interior with a motor tool and cutting through with a knife. The same method was used to open the shallow main gear wells and the opening for the main gear actuators, which are similar to those on the Vought F8U Crusader and A-7 Corsair II. I boxed in the gear wells with sheet plastic.

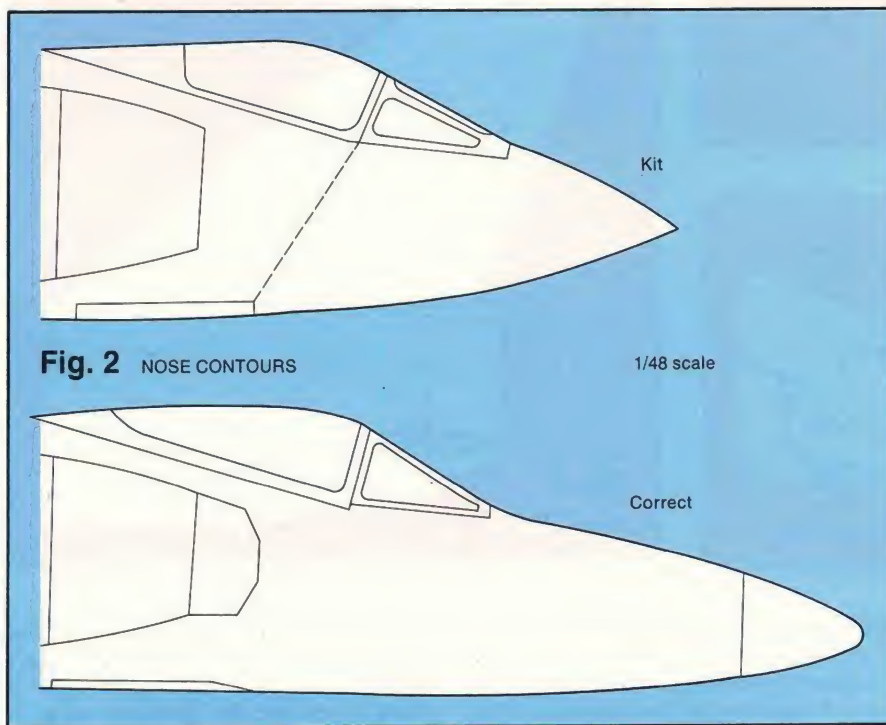
The Hasegawa Tiger has a bulged cylinder that fills nearly half of the main gear wells. I fit a couple of barrel halves from the ground equipment in Monogram's 1/48 scale P-61 (No. 7546) into the wells, Fig. 3. Next, I cut out the nose gear well but didn't box it in until later. Finally, before the fuselage was assembled, the kit tail hook housing was cut out and engine inspection hatch closed up.

I'm a firm believer in finding substitutes in my spare parts box, so I used Monogram's spare afterburner nozzle from the F-100 kit (No. 5416) cut down and inserted in the fuselage, Fig. 4. A piece of sheet styrene was added to the bottom of the new part to give the model the Tiger's characteristic sloped rear underside. A new tail hook housing was built by boxing in the existing





**Fig. 1.** Gil made many changes to the old Lindberg kit. Most obvious is the longer nose, but the exhaust was also extended, a new vertical tail and wing fillets added, and numerous minor details corrected.



**Fig. 3.** A barrel from the ground equipment in Monogram's 1/48 scale P-61 kit serves as the cylinder inside the main gear wells.



**Fig. 4.** The afterburner section from a Monogram 1/48 F-100 kit was used as the extension on the Tiger's aft end.



**Fig. 5.** The cockpit tub (right) and ejection seat (left) were scratchbuilt.

hole. I constantly checked my references and the 1/72 scale model while reworking this area.

Next, I boxed in the nose gear well, and built a tub-style cockpit, Fig. 5, fitting it into the open front end above the nose gear well. I painted it and the fuselage interior medium gray, detailed the side consoles, and glued the tub into the fuselage.

**Nose job.** The method I used to make the new nose is easy, but requires patience. From the drawings, I traced templates, Fig. 6, of the side and bottom views of the nose, cut them out, and attached them to thick sheet plastic with double-sided tape. I cut the plastic to make formers that extend

from the rear of the windshield to the tip of the nose. Next, I split the side-view former lengthwise and glued the halves to the center of the other former. This assembly was then glued to the front of the fuselage, Fig. 7, and reinforced with plastic cocktail swizzle sticks. I attached a piece of sheet styrene to the top of the fuselage to form a base for the windscreen.

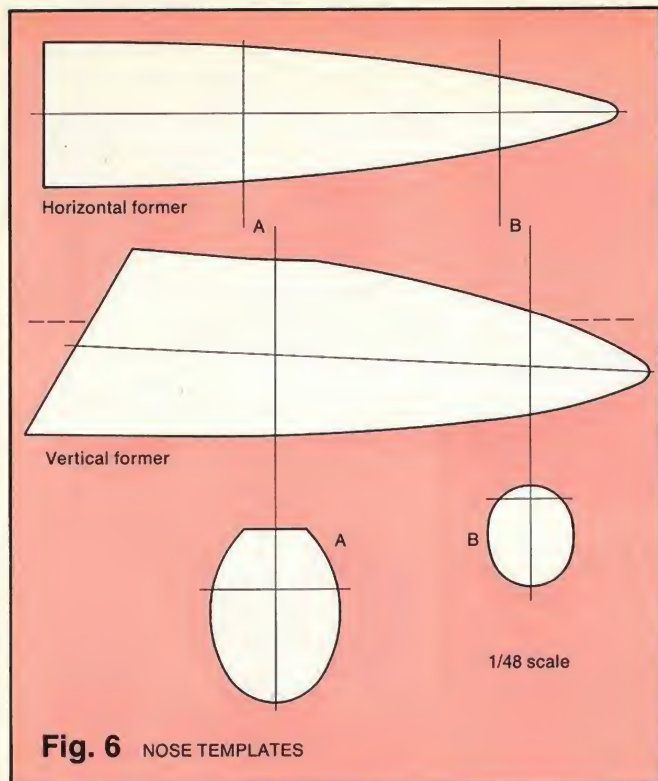
The nose structure was built up with 3M Acryl-Blue\* glazing putty. It took several applications to fill and round out the nose. Be sure to allow drying time for each layer to prevent shrink-

age. The puttied nose was shaped using 100-grit sandpaper. I used finer grades of sandpaper when I started to expose the formers. Work slowly to avoid destroying the proper contours of the nose.

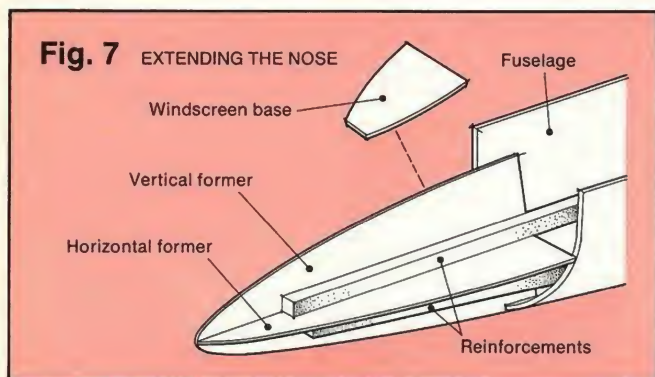
After the nose was shaped to my satisfaction, I made a copy of the kit windscreen with a Mattel Vac-U-Form machine and trimmed it to fit the base on the nose. Next, I built up the cockpit instrument coaming under the windscreen using lead from a wine bottle seal. I also made an instrument panel, taking care to shape it to fit under the coaming. I painted the coaming, added the instrument panel, then glued and faired the windscreen into the fuselage.

\*Minnesota Mining & Manufacturing Co., St. Paul, MN 55101.

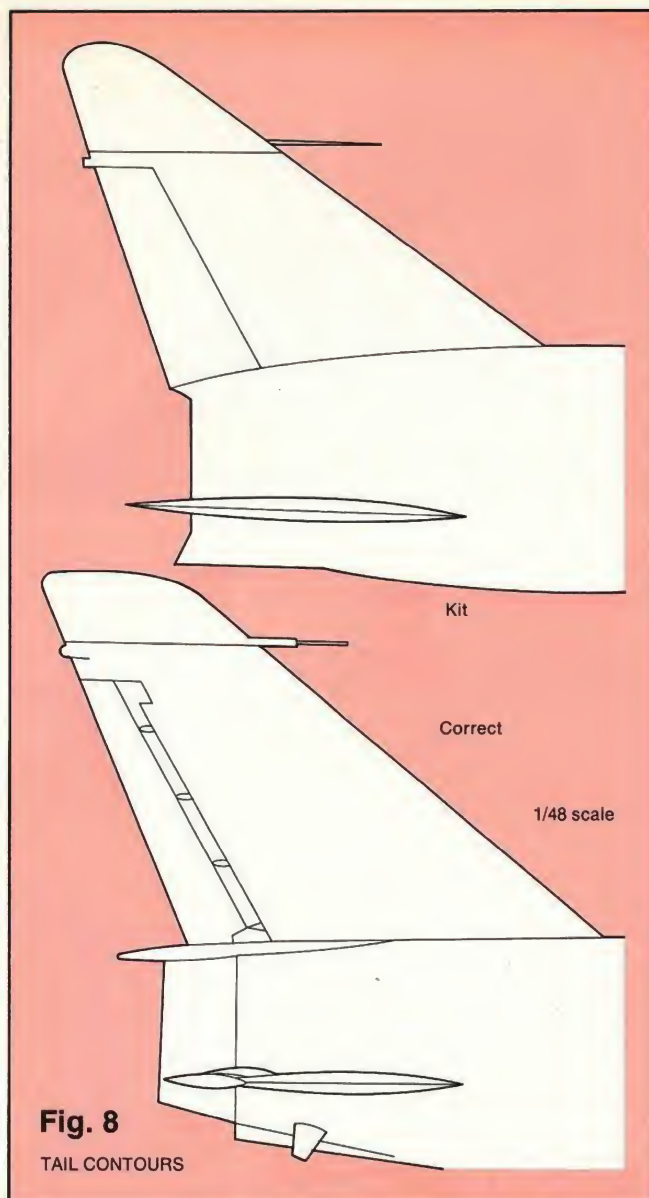




**Fig. 6** NOSE TEMPLATES



**Fig. 7** EXTENDING THE NOSE



**Fig. 8**  
TAIL CONTOURS

I sawed the tail off an old 1/48 scale ESCI F-8 Crusader (No. 4011), made paper templates of the F11F tail from the drawings, Fig. 8, taped them to the F-8 tail, and sanded it to shape. The fairing at the bottom of the tail, Fig. 9, was made from a bomb from my spares box. I filed a large slot in the front half of the bomb so it would fit around the tail, sanded the other end to a point, and glued it to the fuselage. The rear fuselage was puttied and sanded to blend in all of the work and to eliminate the slab-like sides of the kit. To complete the fuselage, I made intake covers and splitter plates from sheet styrene.

**Wings.** The kit had separate flaps, but they had to be extended to the sides of the fuselage. The wing fences needed to be cut down and reshaped. I also filed notches in the wing tips to install clear green and red plastic for the navigation lights and filled the unneeded

rocket attachment holes in the bottom of the wing.

I glued the wings to the fuselage and made templates for the extended wing root leading edges, Fig. 10. I cut two pieces of sheet styrene to match the templates and glued them in place. After fairing both top and bottom of the extensions with putty, Fig. 11, I sanded them to blend into the wings.

The horizontal stabilizers in the Lindberg kit were accurate in outline but the elevator actuator fairings on the top were too small. I filed larger ones from the fins of spare bombs and glued them into place, Fig. 12. Although this is a simple technique, it can be tedious work. The trick was to make all six the same shape and size, easier said than done. I used the same technique to make the cannon ports and shell ejector housings from spare missile fins and noses, Fig. 13.

**Landing gear.** I rooted through my

spare parts box and found suitable main landing gear struts, but I can't honestly say what kit they're from. I glued them into the fuselage using 5-minute epoxy, Fig. 14, and added actuator struts. I used the bottom part of the kit nose gear and rebuilt the top part of it. The main gear wheels came from a 1/48 scale ESCI A-7E (No. 4014) and the nose gear wheels are main wheels from a Hasegawa 1/72 scale A-6 (No. E6). The nose gear doors and the main gear actuator doors were cut down from spare 1/72 scale A-4 gear doors. The main gear doors from the kit were well detailed, so I used them.

The tail bumper was made from scrap plastic and the arrestor hook cut down from a 1/48 scale F-14 tail hook, Fig. 15. Note that the Tiger's hook faced backwards and upside down compared to the traditional hook position. (I'm still waiting for someone to tell me how they reset the hook after the plane





**Fig. 9.** Gil used a small bomb from his spare parts box for the fairing at the base of the tail. The vertical fin was cut down from the tail of an ESCI 1/48 scale F-8 kit.



**Fig. 12.** The elevator actuators were made from spare bomb fins. The hard part was making them all the same size and shape.



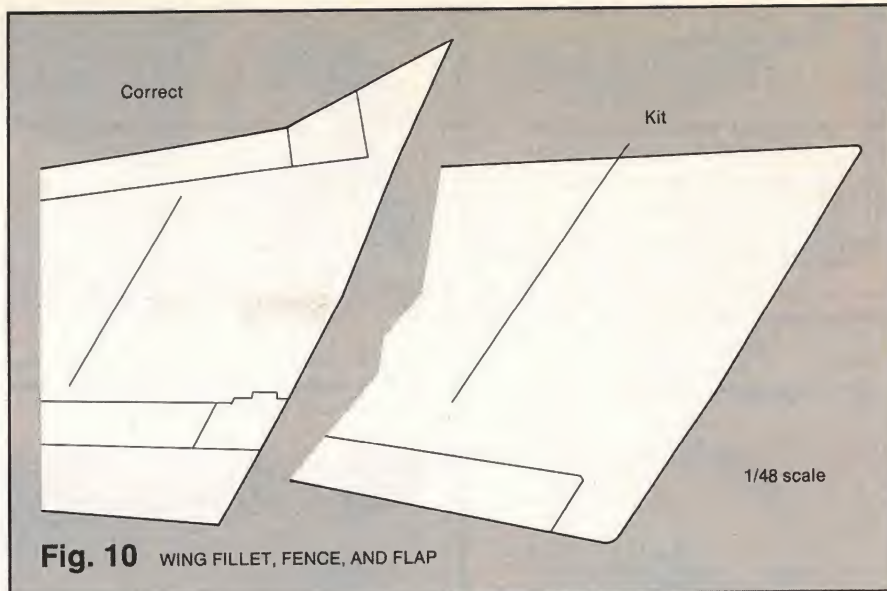
**Fig. 13.** Spare missiles provided the cannon fairings and shell ejector chutes.

landed!) I also added a sheet styrene fuel dump vent.

**Cockpit.** Reworking the canopy was one of the easier parts of this project. I sanded off the kit canopy's inaccurate framing detail and made a new vacuum-formed copy. I masked over the glass areas and set it aside to paint.

I completed the cockpit by building an ejection seat and control column, Fig. 5. The final details to be added were a pitot tube on the vertical fin and a blade antenna under the right stabilizer.

**Colorful finish.** I primed the model with non-buffing Spray 'n' Plate (no longer produced). I like silver primer because it shows all of the scratches left from sanding. Imperfections were filled and sanded until I was satisfied



**Fig. 10** WING FILLET, FENCE, AND FLAP



**Fig. 11.** The leading edge fillets were attached to the wings and sanded smooth.

with the finish. Then I rescribed panel lines on the model using a straightedge and an X-acto knife. I saved extra detail work by scribing in the speed brake, wing folds, and rudder hinge lines.

I used Testor Model Master FS 17875 Insignia White and FS 16440 Gloss Gull Gray for the basic paint scheme. The dark red trim is from a small bottle of Testors. I've found that almost all paints airbrush very well when thinned with Floquil Diosol. It works especially well on the small bottles of Testor gloss paints. The natural metal exhaust, wing, tail, and intake leading edges were painted last, with non-buffing Spray 'n' Plate.

I covered the entire model with four light coats of Future acrylic floor shine—Future is a good gloss coat that doesn't yellow, but it will run if applied too heavily. It doesn't need to be thinned and you can clean your airbrush with any thinner. If you acciden-

tally let Future dry in the airbrush it can be removed with ammonia.

Since no aftermarket decals are available for the Tiger in this scale, I compromised with marking accuracy. (I try to avoid getting bogged down in accuracy and details which may prevent a project from being completed.) Most of the common letters, numbers, and insignia are available on various 1/48 and 1/72 scale decal sheets. I had to use standard white "NJ" on the tail because no oblique white letters were available, Fig. 16. I applied all of the decals using Champ\* decal setting solution as added insurance against sil-  
vering and to help bend the black decal border of the lighting flash around the nose. A final gloss coat was added and after it had dried all of the remaining parts were glued into place.

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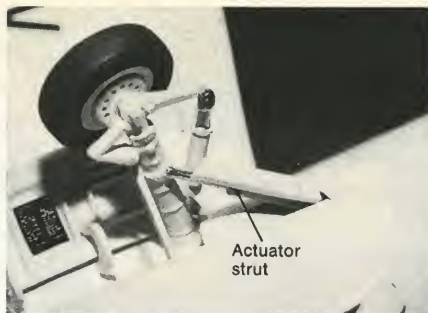


Fig. 14. Main landing gear struts and wheels came from the spare parts box. Note the new actuator strut.

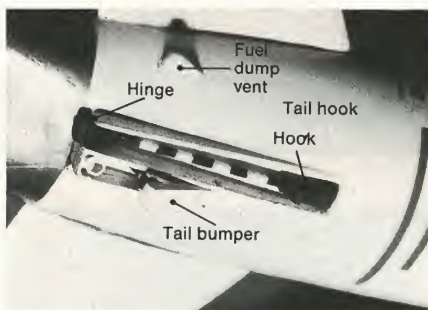


Fig. 15. The Tiger's unusual tail hook looks as though it were installed backwards. A double-jointed attachment allowed it to be stowed after landing. Note the sheet styrene fuel dump vent.



## Meet Gil Hodges

Gil has been building models for nearly 20 years. His father introduced him to the hobby with a cherry-red Aurora Me-109, and Gil remembers gluing his fingers to an Aurora P-6E. Gil joined the International Plastic Modelers Society in 1976 and has served as vice-president of the Eddie Rickenbacker chapter in Columbus, Ohio.

His main interests are 1/48 scale aircraft with an occasional 1/32 scale kit thrown in for variety. His favorite aircraft are those of the "golden age" and fighters of the 1950s. Gil is 27 years old, married with two children, and is a second assistant manager for the McDonald's restaurant in Grove City, Ohio. He says his wife is understanding about his hobby; understanding he's in the basement and not at the nearest bar.



Fig. 16. With no aftermarket decals available for the Tiger, Gil came as close as possible with available letters, numbers, and stripes.

Although it was a fair amount of work, the result is a unique addition to my 1950s 1/48 scale collection. With imaginative techniques, research, patience, and a little fudging in spots, many older kits can be built into respectable models.

**FSM**

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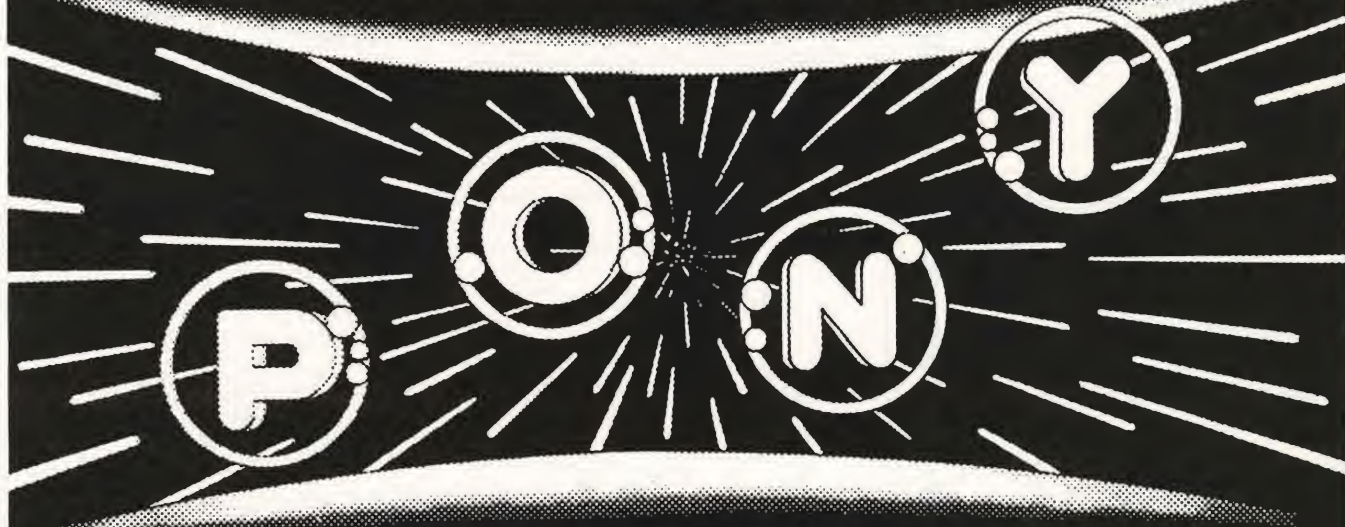
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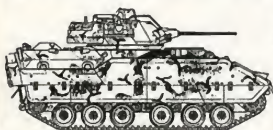
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Conducted by Paul Boyer

**More on Dora.** Several readers have asked for more information on railway guns similar to Lewis Pruneau's Dora featured in the January/February 1985 issue of *Fine-Scale Modeler*. Reader Fred Charlton suggested a couple of references: *Pictorial of German Railway Artillery of World War Two* (Koku-Fan Publications, 1977, text in Japanese) and *German Artillery of World War Two* by Ian Hogg (Arms and Armour Press, 1975) are good sources. Also, the German *Waffen Revue*, No. 13, June/August 1974, has detailed technical description with photos of the 80 cm Dora. Modelers can obtain a set of 1/76 scale plans of the Dora from John L. Rue, 2 Cowley Walk, Park North, Swindon, Wiltshire SN3 2RR, England.

Paul Boyer

**Heller car models.** Can you give me a source for the Heller Historic Racing Car models mentioned in Update in the January/February 1985 FSM? *Robert Garner*

Your local hobby dealer should carry them. If the shop doesn't have the kits in stock, ask the owner to order them from Polk's Model Craft Hobbies Inc., 346 Bergen Avenue, Jersey City, NJ 07304. More will be added to the line this year.

P. B.

**Airbrush advantages.** What are the advantages of an airbrush over spray cans? Also, I have trouble with paint seeping under masking tape. Is there any way to prevent this?

Paul Stefanski

Although the airbrush may seem an advanced tool, it is easy to use once you get

used to it. The advantages far outshine those of spray cans. First, you have more control over the amount of paint sprayed on the model's surface — spray cans only can spray full blast. With the airbrush, you can control the volume of paint, air pressure (with a regulator), and the area of coverage.

Say you just need to spray a nose cone. With a spray can you may have to mask off the rest of the model to prevent overspray from ruining your paint job. If you're careful with an airbrush, you'll only have to mask off the forward end of the fuselage.

Another advantage is that you can use almost any brand and color of paint including colors you mix yourself, not just what is available in a spray can. Just thin bottled paint and spray, but take time to determine the proper thinning ratios.

Airbrushed paint reaches the surface almost dry, which will help solve the problem of paint seeping underneath masking tape. Masking tape (or any tape for that matter) won't keep wet paint from flowing, whether sprayed from a can or brushed from a bottle.

P. B.

**Realistic bone.** I am building the Revell human skeleton and the life-size human skull and want to know what paint would best simulate real bone. Also, what should I use for shading to make it look as real as possible?

Chad Krutsinger

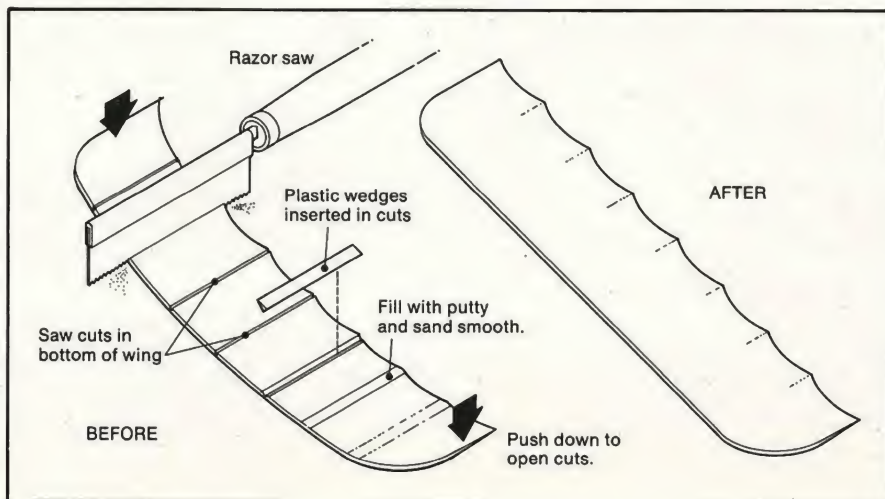
Try using Polly S Antique White (PF16) if you are hand brushing or Floquil Antique White (R85) if you're airbrushing. Both colors are a creamy white that should simulate natural bone well. For shading, try using a medium brown wash (very thin paint) applied to the joints and interior areas. To get a good idea of shading, check with the biology department of your local high school to see if you can study a real skeleton up close.

P. B.

**Warped wings.** I recently built a vacuum-formed model of a World War One aircraft and ran into a serious problem — after gluing the wing halves together, the wing warped into a bad case of anhedral. How can I fix this?

Tom Leamon

The cause of your problem may be too much glue. Split the wing open and reattach with a little liquid cement. If it appears that this would ruin the wing, make several





cuts in the underside of the wing and glue in small strips of plastic. These wedges force the wing into the proper shape. I can't tell you how many cuts you'll need to make — just add a few at a time until you overcome the warping. Cover the cuts and strips with filler putty and sand smooth.

You also could immerse the wing in hot water and then reshape it. After you get rid of the anhedral, tape the wing to a flat surface and let it cool.

E. R. Staszak

**Sea Fury kits.** Are any kits of the Hawker Sea Fury available?

Thaddeus Kruszewski

The only kits of the Hawker Sea Fury are the 1/72 scale kit by Frog, no longer available, and the 1/48 scale vacuum-formed kit by Falcon. This kit costs \$13.95 and should be available from War Eagle, P. O. Box 255, New Baltimore, MI 48047.

P. B.



**Tiny tubing.** Where can I buy small-diameter tubing similar to hypodermic needles to use for small-scale machine gun barrels? The tubing available in model railroad shops is too big for my needs.

Mike Jurkosky

Small Parts Inc., 6901 N. E. Third Avenue, P. O. Box 381736, Miami, FL 33238, sells small-diameter stainless steel tubing in 28 gauges ranging from .008" to .203" outside diameter (.028" shown). The tubing comes in 6", 12", and 24" lengths and varies in price. Write for a catalog and prices.

P. B.

**Oil paint troubles.** After reading both "Painting your first figure in oils" by Bob Knee, Larry Munné, and Bill Ottinger (March/April 1984 FSM), and George DeWolfe's "Painting faces in artist's oils" (March/April 1985 FSM), I thought I was ready to paint figures with oils. I bought Winsor & Newton paints, a color wheel, Grumbacher Gum Spirits of Turpentine, Floquil M9 Primer, and red sable brushes. After priming the figure, I started putting Spectrum red on the figure. Disaster. The paint started to clump, wouldn't spread easily, dried almost as soon as I put it on, and began to form tiny granules. I tried to shade the figure but the paint wouldn't blend. What has gone wrong?

Chad Krutsinger

First, Spectrum Red is not one of the Winsor & Newton Artist's Oil colors, but one of its line of Designer's Gouache water-base paints. Mixing these with turpentine forms the clumps and granules you experienced.

When using oils, don't use gum spirits of turpentine. It's great for painting on canvas,

but lousy for figure painting as it tends to get gummy and leave unwanted glossy patches. Try Pactra, Testor, or Winsor & Newton paint thinner instead.

George DeWolfe

**"Pewterizing" figures.** I recently purchased Chota Sahib's excellent Napoleon figure and thought that polishing it and leaving it unpainted might produce a novel and attractive figure. However, I'm not quite sure how to go about it. Any suggestions?

Barry Lawrence

Here's the method I use to "pewterize" figures: First, assemble the figure and clean up seam lines and other blemishes. Next, scrub the figure with 0000 steel wool, then polish it with crocus cloth or a paste metal polish like Blue Magic. Wash it with a fine-bristled toothbrush and soapy water, then air-brush a polyurethane gloss varnish over the entire figure and let it dry thoroughly.

To give the recessed areas more depth, use a thin wash of blue-black artist oil and wipe off the excess with a soft cloth. After the wash is dry, apply another coat of polyurethane gloss.

George DeWolfe

**Textured foil.** I have embossed foil that satisfactorily simulates safety tread plate on the conversion I'm building. What adhesive can I use that won't affect styrene? I'm afraid that if I use an adhesive and burnish the foil down, it will eliminate the texture. Any suggestions?

Bill Jakobson

Try one part rubber cement thinned with three parts rubber cement thinner. Brush this onto the foil and the surface, let it dry for a minute, and gently press the foil onto the surface. This will act like contact cement. Neither the cement nor thinner will harm styrene, but the thinner can affect some paints and decals. I have foiled a few airplane models with household aluminum foil with this mixture, but applied the thinned glue to the foil only and burnished it down with a paper stick from a cotton swab.

I don't know the gauge of the foil you're using, but if you're trying to keep its texture, it probably won't take any burnishing. Perhaps glue on both the foil and surface will do the trick.

P. B.

**RTV sources.** In *How to Build Dioramas* (Kalmbach), Shep Paine mentions using Room Temperature Vulcanizing (RTV) silicone rubber to make his molds. I've checked at hobby and craft stores for RTV and can't find it. Do you have a source?

Timothy Tynan

Try plastic supply companies listed in the Yellow Pages. If this fails, see if there is a GE or Dow-Corning sales office in your area. These are large corporations that sell a variety of products, and even though the local office may not be selling RTV, someone there should be able to tell you who does. If all else fails, write to these addresses: General Electric Co., Silicone Products Division, RTV Products Department, RR 4, Watford, NY 12188; Dow-Corning Corp., Midland, MI 48640. Also try Castomold from Castolite, P. O. Box 391, Woodstock, IL 60098.

P. B.

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# Modeling the





# Streak Eagle in shades of silver and gold

A record-breaking F-15A in 1/48 scale

BY JAMIE PYE

**T**HE MCDONNELL DOUGLAS F-15 Eagle is a hot airplane — so hot that it can accelerate in a vertical climb without depending on its wings for lift. This only happens when the thrust-to-weight ratio is greater than 1:1. With afterburners, the F-15's two Pratt & Whitney F-100 engines generate a total of 50,000 pounds of thrust, more than enough to lift the airplane's normal takeoff weight of 40,900 pounds.

The United States Air Force decided to take advantage of this capability to establish new time-to-climb records, breaking the old ones set by U. S. Navy F-4 Phantom IIs and various Russian aircraft. On February 1, 1975, the USAF flew a slightly modified F-15A Eagle to a world time-to-climb record of 98,425 feet (30,000 meters) in 3 minutes, 27.8 seconds. The aircraft, nicknamed Streak Eagle, differed from production F-15As in several ways.

In order to perform its special mission, the Streak Eagle had an instrumented nose boom to determine angle of attack and sideslip, a camera shooting over the pilot's shoulder, sensitive

G (gravity) meter, battery-powered radio, standby attitude gyro, and equipment to verify the altitudes achieved. All unnecessary weight was removed, including missiles, radar, M-61 Vulcan cannon, tail hook, one of the generators, utility hydraulic system, and flap and speed brake actuators. In all, the Streak Eagle weighed about 2,800 pounds less than a typical F-15A.

But the most obvious difference was the unusual finish. To save more weight the aircraft was left unpainted. The aircraft's treated metallic and composite materials made it look as though it were made of silver and gold.

**Plastic Eagles.** The Streak Eagle's colorful pattern makes an interesting as well as challenging modeling subject in any scale. This article deals with the Tamiya 1/48 scale kit, but I also built a Hasegawa 1/72 scale Streak Eagle, Fig. 1. I tried to reproduce as closely as possible the many metallic shades and weight-reducing modifications on the aircraft.

Since the Streak Eagle was an early F-15A with a short air brake, I puttied over the long air brake of the Tamiya kit and rescribed the short air brake. I

All photos, McDonnell Douglas unless otherwise credited.



Jamie Pye

Jamie's MRC-Tamiya 1/48 scale Streak Eagle shows off dozens of shades made with Metalizer and enamel paints. Note nonstandard instrument boom on the nose. Jamie's model

shot outdoors at an airfield (above) looks nearly identical to the real aircraft (top). Careful attention was paid to each panel of the multihued aircraft.





Fig. 1. In addition to the 1/48 scale model, Jamie built a Streak Eagle in 1/72 scale using the Minicraft-Hasegawa kit.



Fig. 2. Scratchbuilt parts dress up the cockpit of the model. Note canopy latches, rearview mirrors, and styrene blade antenna behind the seat.

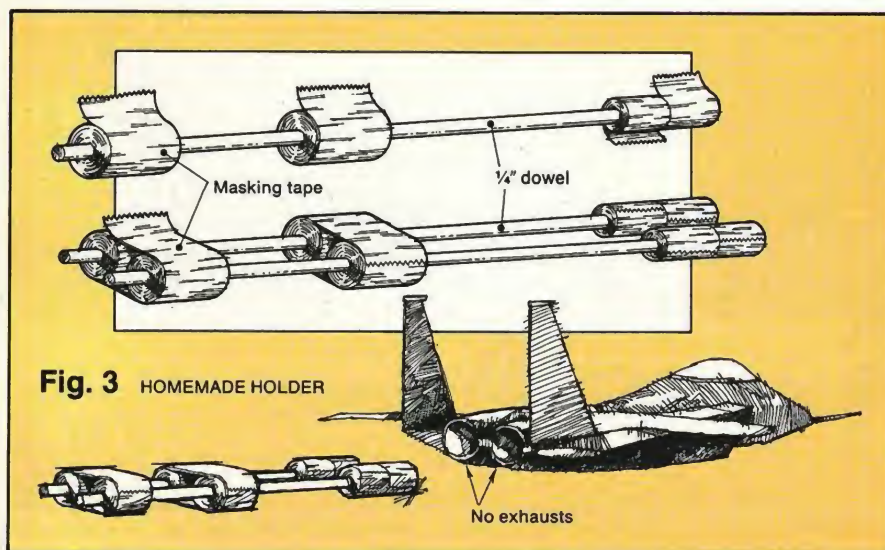


Fig. 3 HOMEMADE HOLDER

also rescribed other panels to correspond with the actual aircraft. To scribe panel lines, I first cut sharp edges on pieces of drafting tape and used them as guides. Next, using a fresh No. 11 X-acto blade, I applied light pressure and scribed each line from end to end without stopping. This sounds hard, but it gets easier after a few tries. Practice on an old piece of plastic.

I extended the engine intake walls early in construction, and filled in the upper back intake vents as on the real aircraft. The gunport and vents were filled in with putty, sealed with super glue, and polished out. I left off the horizontal stabilizers and landing gear until the end to make finishing easier. I installed a tapered brass instrument boom in the nose and faired it in with super glue. The wing navigation lights and the vent on the bottom starboard side of the fuselage were filled in and sanded smooth.

I detailed the cockpit early in construction, referring to Bert Kinzey's *F-15 Eagle in Detail & Scale*. These photos came in handy for detailing the seat, instrument panels, canopy mirrors, and intricate structural braces below the canopy frame. I made all the instrument panels from sheet styrene and installed them in the cockpit, Fig. 2. Streak Eagle photos from McDonnell Douglas showed a white antenna located above the canopy frame, so I added a sheet styrene copy.

**A multihued metal finish.** To produce a realistic metal finish on model aircraft, the surface has to be flawless. Natural metal finishes, whether foil or paint, reveal the tiniest scratches. I used Metalizer\* paints on my model. They come in several shades, which can be mixed together to make more.

\*Metalizer Products, 1019 Bonita Street, Tustin, CA 92680.





For the smaller panels, Jamie airbrushed Metalizer on clear decal film, cut out small pieces, and applied them to the model. Note small red-orange and gray panels.

They must be airbrushed, and after drying for a few minutes can be buffed with a soft cloth to a high metallic sheen. But the paint is so revealing that even the surfaces of primer coats show through, so the bare plastic must be polished to a glass-like finish before painting.

All surface blemishes were carefully filled in with super glue, sanded with 600-grit sandpaper, and polished thoroughly with Brasso-soaked rags. I cut 4" x 4" swatches from old cotton T-shirts, soaked them in well-shaken Brasso (a brass and metal polish available in grocery and hardware stores), and left them outdoors in the sun to dry. (The liquid in Brasso contains ammonia that affects some plastics.)

To make it easier to spot flaws, I held the model up to a light and looked into the reflections for small pits and scratches. Remember that the slightest flaw will show after the paint is buffed out. I left off the exhaust nozzles so they could be painted separately and made a handle from two wood dowels to hold the fuselage, Fig. 3. This is necessary because you can't touch a metallic finish until it has been sealed.

I mixed 29 different shades of Metalizer — from golds to silvers to metallic green (made from Metalizer aluminum and Pactra metallic green). I assigned a number to each, sprayed a small quantity on a small section of a spare



The real Streak Eagle again, banking away from the photo plane. Composites and exotic alloys used to build modern aircraft result in the patchwork of unusual colors.

polished wing, and marked its number beside it — a sort of "color card." Referring to photos of the Streak Eagle, I chose appropriate shades from my color card.

Before painting the exterior I painted the front cockpit area gray, cockpit instrument coaming metallic green, intake interiors gray, and wheel wells white. These areas were then masked and the entire model was painted Metalizer gold except for the nose — a second "handle" that was painted later.

Metalizer finishes are fragile; masking tapes pull the paint off the plastic. I masked the panels using pieces of writing paper held in place by hair clips padded with thin foam rubber, Fig. 4. I also used wet paper which held to the surface long enough to spray a panel, Fig. 5. The wet paper system is risky because the air flow can lift the edge of the paper. I also sprayed panels one shade then fogged sections with another shade.

Since some panels were small, I sprayed various shades on clear decal paper and cut them to fit. I also did this for some nonmetallic sections. After the rest of the aircraft was painted I sprayed the nose.

I applied the Streak Eagle decals that came with the kit using Micro Set and Micro Sol, washing off excess solution. The decals were given a day to dry. Then, the whole model was sprayed with Metalizer Sealer which allows handling the model without leaving fingerprints.

**Final details.** I removed the landing lights from the nosewheel strut, then painted and attached the landing gear struts and doors. The horizontal stabilizers were rescribed, painted, and installed. The scratchbuilt over-the-shoulder camera was added to the seat,

which in turn was installed in the cockpit and the canopy glued on. The instruments on the nose probe were made from fine brass wire and sheet styrene. The pitot tubes on the sides of the nose were positioned. Finally, the pre-painted exhausts were added to complete the model.

At the 1982 IPMS national convention in St. Louis, this model won first place in the 1/48 scale medium jet category. I got a chance to meet Bob Pukala and other McDonnell Douglas employees from St. Louis when they stopped by to see the model on the contest table. They recognized the subject of the



## Meet Jamie Pye

Jamie Pye, of La Mirada, California, is interested in all forms of model building. He entered his first competition in 1977 and has won several first place awards at IPMS national conventions. At the 1980 IPMS/U. S. A. national convention in Salt Lake City, Jamie, then 19, became the youngest winner of the best of show award for his "First World Flight" diorama featuring four 1/72 scale Douglas World Cruisers. He recently graduated from college with a degree in aerospace engineering.



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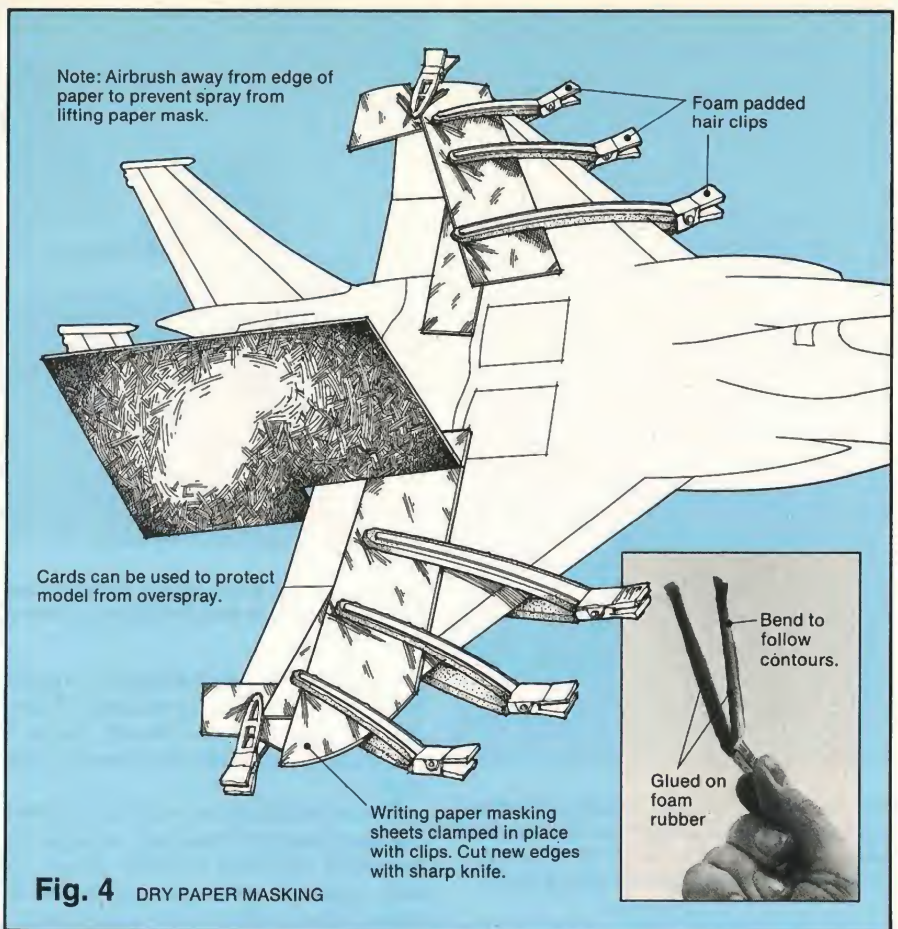


Fig. 4 DRY PAPER MASKING

model right away. Bob and Tony Paradise provided me with the photos of the actual Streak Eagle I used for reference. Thanks to them, I was able to complete the project. **FSM**

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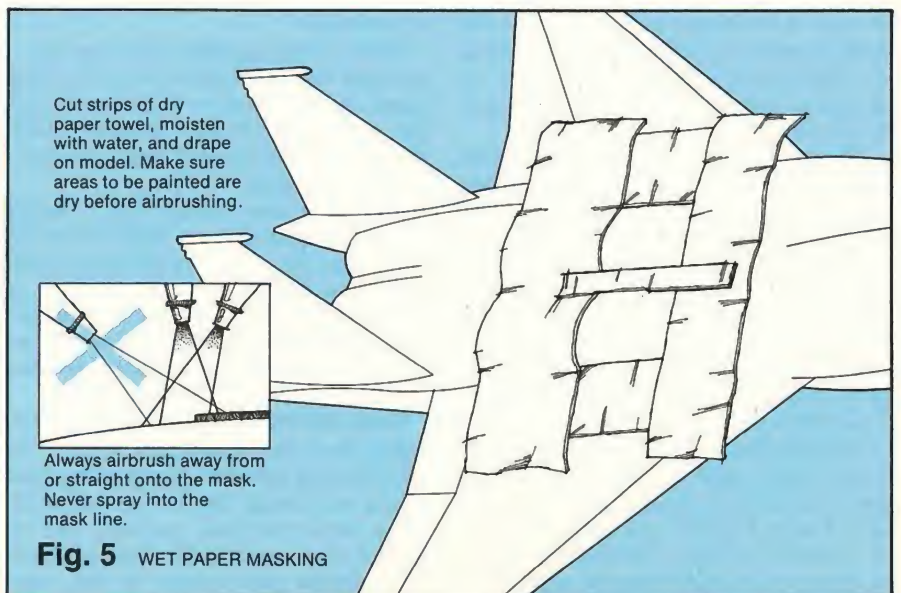


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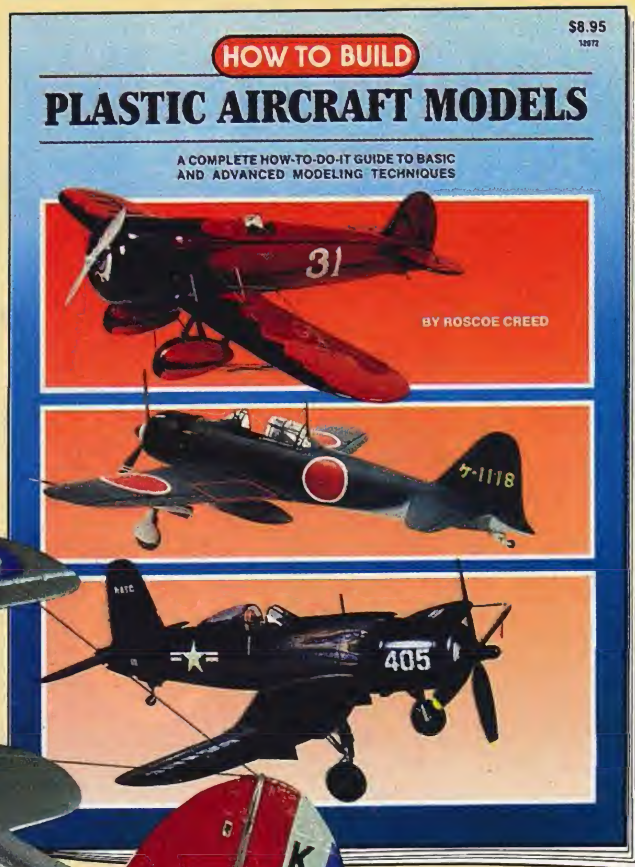


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Fans of the fifties will recognize the 1953 Chevrolet with this sporty add-on visor. By 1956, the Chevy began to sprout fins, which reached their peak in 1959. The long rounded hood also disappeared in the late '50s. (Below) The large chrome grille shows well in this overpass view.

## Modeling a sporty 1953 Chevy Bel Air

Adding a visor brings new character to a classic



BY TOM LAMARRE

**I** COULDN'T BELIEVE my eyes. As I was driving along the freeway headed for Ann Arbor, a yellow and white 1953 Chevrolet loomed in my side mirror and passed me by. Looking like a refugee from a junkyard, the Chevy was covered with rust and pitted chrome, and its trunk lid was plastered with University of Michigan bumper stickers. But the well-used Chevy was obviously in good running condition. What interested me most, however, was its exterior visor — a nice accessory to add to Monogram's 1/24 scale 1953 Chevrolet model.

Projecting from the leading edge of the roof, the exterior visor was at its peak of popularity from the late '40s to mid-'50s. Nearly every car manufacturer offered the visor as an option, while many auto accessory firms advertised their own versions.

The exterior visor was touted as a practical item, shading the driver's eyes from the glare of the sun, keeping the interior cooler, and helping to protect the windshield from ice and snow. But the average car buyer probably wanted the visor for one reason only — looks. This one accessory changed the entire appearance of an auto, giving it a "meaner" custom appearance.





Fig. 1. Tom sizes a piece of K & S brass sheet for the visor against the top of the windshield.

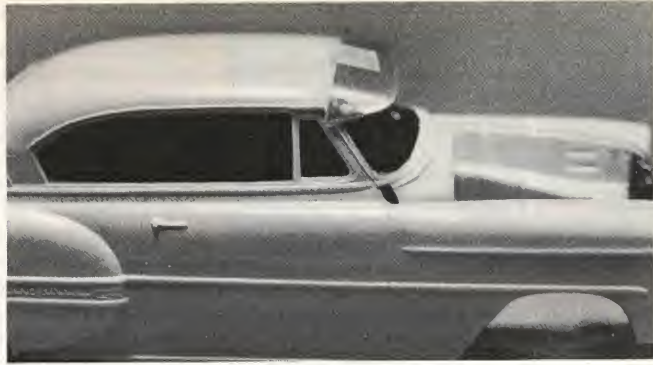


Fig. 3. After final bending and shaping, the visor was checked for fit against the front of the roof.

Anyone who has driven a car made in the early to mid-'50s is aware that the windshields were far shallower than they are now. This meant that an exterior visor frequently obstructed the view of traffic signals. To get around this problem, small prisms were sometimes mounted on the dashboard, enabling the driver to see a refracted image of the traffic light. So much for practicality.

**Making the visor.** Although I chose Monogram's '53 Chevy as the basis of this project, the exterior visor would be appropriate for many other models as well. The AMT '49 Ford and '49 Mercury would be particularly good candidates for visors.

I used .032" K & S brass sheet to make the visor on this model but sheet styrene could also be used. By holding a 1/2" strip up to the top of the windshield, Fig. 1, I figured the length to be 2 5/8". I used tin snips to cut the ends. I eyeballed one end and used it to make a template to cut the other to keep them uniform. The ends of the brass strip were then rounded off with a file and bent down with pliers, Fig. 2. I fit the visor to the windshield by filing, shaping, and sanding, Fig. 3. The visor was then washed, primed, painted, and set aside to dry.

**An easy and attractive paint scheme.** I selected the paint scheme suggested in the instructions — white top and trim inserts and sky blue body. The Monogram body comes molded in sky blue plastic that matches the shade shown in a Bel Air Sport Coupe ad published in the August 1953 issue of *National Geographic*. (*National Geographic* magazines are excellent sources for old auto ads.) This illustration corresponds exactly with the photos used on the side of the Monogram box. Whatever the color, though, the exterior visor should be painted in the same shade as the top.

Once I sanded off the mold parting lines, the body was washed, allowed to dry, and wiped with a tack rag. (A tack rag, available at hardware stores, is a

sticky disposable rag that picks up sanding dust, allowing a smoother finish.) Since the sky blue plastic was the right color, I applied a coat of MRC-Tamiya clear (X-22) over it. Tamiya's new acrylic enamels go on smoothly and dry quickly (one hour between coats), and, if caught promptly, mistakes can be wiped off with a wet rag. Once dry, though, the acrylic enamel provides a tough finish with excellent gloss. When the clear coat was dry, I painted the top Tamiya gloss white (X-2), along with the trim inserts — several coats were required.

The most time-consuming aspect of building the model was applying the chrome trim — and there is plenty of it on a '53 Chevy. Silver paint is easy, but foil provides a better shine. Commercial self-adhesive foils are available, but I used Micro Metal Foil Adhesive\* and household aluminum foil. It's easier to cut straight lines because I can use firmer pressure with the knife.

**Interior.** I also used aluminum foil for the interior chrome trim, with the exception of the lower door moldings. Since the lower moldings were awkward to reach with a knife, I used thin strips of aluminum tape instead. The interior tub and seats were left blue, but white sections were painted according to the instructions, Fig. 4.

To make the dashboard look authentic, I referred to a photograph in *Sixty Years of Chevrolet* (see references). The dash itself was left blue, but the portion containing the radio and the area between the gauges were painted gloss white. I painted all knobs black and the ignition (second knob to the right of the steering column) silver. The radio, rings around the gauges, and the tiny "Chevrolet" script were dry-brushed silver. I covered the large gridded portion of the dashboard with aluminum foil, a small touch that really brought the dash to life, Fig. 5. The speedometer gauge should have a black outer



Fig. 2. The brass visor was cut with tin snips, filed to shape, and bent with pliers.



Fig. 4. Tom painted the interior according to the kit instructions and used foil to simulate the chrome trim.

ring and a white center, while the other gauges were black. When dry, each gauge was given a drop of Tamiya clear paint to simulate glass.

**Wheels.** The tires in the kit left much to be desired. The problem was not accuracy (although they are a bit wide for a stock '53 Chevy), but excess flash — and one tire had a bad cut on the inside. Be sure to have the plain side of the tire facing out if you make your model stock.

After shaving off the excess flash, I sanded the tread to remove some of the shine and applied two coats of Pactra

\*Krasel Industries, Inc., 919 Sunset Drive, Costa Mesa, CA 92627.



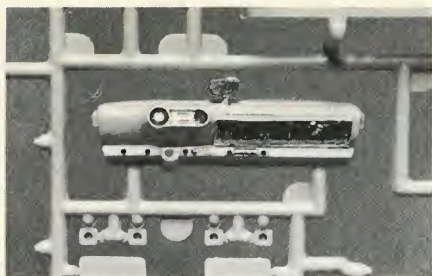


Fig. 5. The dashboard was painted and trimmed with foil while still on the sprue.

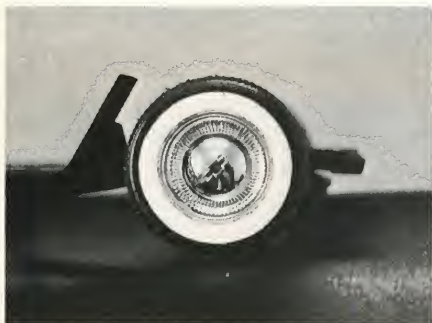


Fig. 6. Tom painted the Chevrolet emblems on the hubcaps and removed excess paint with a fingernail.



Fig. 7. Tom painted the molded-in electrical wiring and straight six-cylinder engine.



Fig. 8. To simulate the taillights, Tom painted red enamel over the chrome kit parts. Note multicolored Chevrolet emblem in the center of the trunk lid.

Clear Flat to the sidewalls. The outer edges of the wheels were painted the same color as the body (in this case Pactra Sky Blue). The Chevrolet emblems in the center of the wheel covers were painted Pactra Royal Blue, with the excess scraped off the chrome with my thumbnail, Fig. 6.

I detailed the chassis by painting it flat black with a silver exhaust system and bolt heads. I also painted the entire inner portion of the body flat black to keep unpainted plastic from being seen underneath. It's much better to glue the fender skirts to the body before the body is attached to the chassis. Otherwise, the skirts are hard to position properly and there is the danger of smearing glue on both the body and the skirts.

**Engine.** To approximate the finish of the Chevy 115 hp "Blue-Flame" six-cylinder engine, I mixed Testor dark blue and green paints. The rest of the engine parts were painted according to the instructions, Fig. 7. For a finishing touch, I painted the wing nut on the air cleaner and radiator clamps silver. I don't add engine wiring on models smaller than 1/16 scale; I'd rather spend my time working on the exterior.

An important consideration when building a replica stock model is whether you want to duplicate a showroom new car or one that has been in service for a time. If I want it to look used, I use flat paints on the engine and engine compartment, with rust the predominant color for the engine and exhaust system.

I prefer to paint small pieces while they are still attached to the sprues, and a magnifying glass with a flexible stand is an invaluable aid. Without one, I would have had a difficult time painting the '53 Chevy's hood and trunk emblems. The almost invisible Chevrolet "bow ties" were painted Pactra Royal Blue with a No. 00000 red sa-

ble brush. When dry, the upper left and lower right rectangles were painted Mandarin Red, the lower left and upper right rectangles Gloss White. Even though the emblems are small, the paint detailing really stands out. I used these same paints on the chrome taillights. Although the two taillights look identical, there is an up and a down and a right and a left, so be sure you paint the upper and center sections red, Fig. 8. I painted the chrome grille openings flat black to make them look open, Fig. 9.

When all of the assembly steps were completed, I attached the visor with a general purpose adhesive, but epoxy would work just as well. I realized that something was still missing — the radio antenna. I cut down one of the CB aerials included in the kit and painted the base flat black to simulate the rubber mounting. The antenna should be mounted on the left front fender, just forward of the windshield. If you have a round mirror in your parts box, glue it to the lower edge of the left windshield post.

In miniature form, the '53 Chevy is still being sold, a fact that attests to its excellent styling and enduring appeal — even better when personalized with a sporty exterior visor. **FSM**

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Fig. 9. Another emblem sets off the hood. Tom painted the recessed areas black to add depth to the grille.



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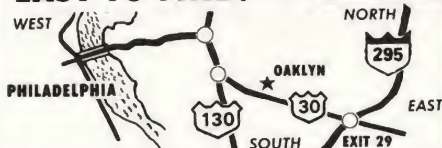
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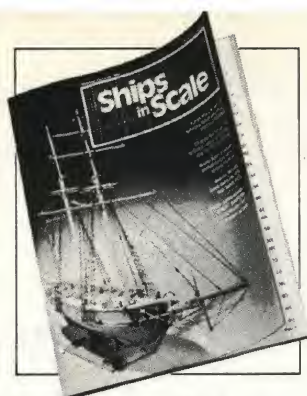
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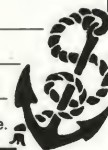
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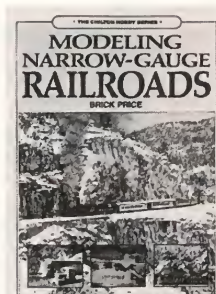


### How to Build Plastic Aircraft Models

Roscoe Creed is the author of this new Kalmbach how-to modeling book, which is devoted exclusively to plastic aircraft modeling. Creed first describes step-by-step how to assemble, paint, and decal a model of a low-wing, single-engine, tail-dragger airplane as your first plastic modeling project, then moves to more advanced topics, including detailing, weathering, and applying gloss and metallic finishes.

Creed is a full-time free-lance journalist, a skilled photographer, and an experienced modeler (he's been active with the San Antonio, Texas, chapter of the IPMS/U. S. A. for many years). The book is clearly written and visually appealing; the how-to information is consistently well presented. The 60-page, 8 1/4" x 11 1/4", soft-cover volume contains 195 photos (90 in color) and 11 drawings. Much of the material should be useful to intermediate and advanced modelers, as well as to beginners.

The book is published by Kalmbach Publishing Co., 1027 North Seventh Street, Milwaukee, WI 53233; the price is \$8.95 plus \$1.00 postage if ordered directly from the publisher.



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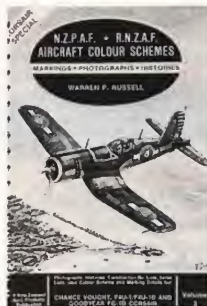
Brick Price, a professional modeler for the movie industry, is the author of this 253-page, 7" x 9", soft-cover book that explains the basic principles, materials, and techniques used when building model railroad layouts featuring narrow-gauge trackwork and rolling stock, most often in western

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The book is published by Chilton Book Company, Radnor, PA 19089; the price is \$17.95.

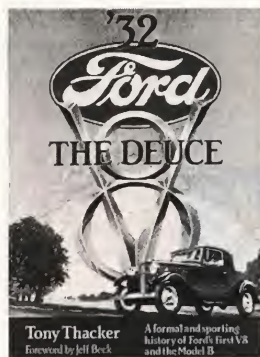
### NZPAF/RNZAF Aircraft Colour Schemes, Markings, Photographs, Histories, Volume 3

Written and published by Warren P. Russell, this 184-page, 6 7/8" x 9 3/4", soft-cover, wire-bound book contains 19 pages of drawings and 166 black-and-white photos showing the color schemes and markings applied to 424 Royal New Zealand Air Force Corsairs during and after World War Two.



The text includes descriptions of paint colors (with U. S. Federal Standard and Humbrol equivalents), fin flashes, and roundels. There is a capsule history of each aircraft.

The book is sold by New Zealand Aero Products, P. O. Box 17, Invercargill, New Zealand, for NZ\$25.75 (about \$11.50) plus NZ\$2.25 (about \$1.05) postage outside New Zealand.



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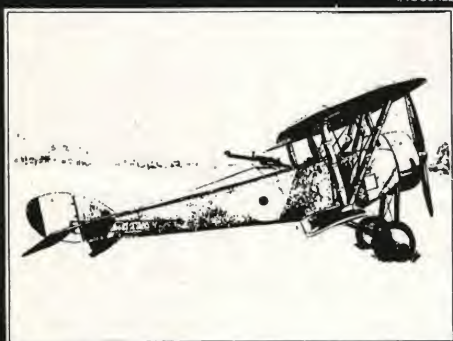
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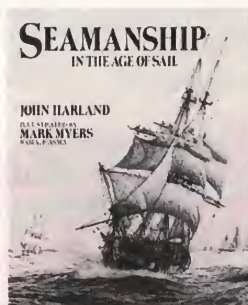




### Airlines of North America

Compiled by Robert Shives and William Thompson, this 8½" x 11", hard-cover book contains almost 1,000 black-and-white photos (nearly all are side views of airliners) as well as brief histories of 39 important airlines that have operated in North America. There is some coverage of regional carriers and third-level commuter services. The text is confined primarily to paragraph-length captions for each picture.

The book is published by Crestline Publishing, 1251 North Jefferson Avenue, Sarasota, FL 33577; the price is \$24.95.



### Seamanship in the Age of Sail

The subtitle of this 320-page, 9¾" x 11¾", hard-cover book by John Harland states that it is "an account of the shiphandling of the sailing man-of-war 1600-1860, based on contemporary sources."

There are chapters on such topics as bending, loosing, and furling sail; making and shortening sail at sea; steering; and handling the ship in a storm. The author's conclusions are based on research in European and American museums and archives.

The text is clearly written and can be understood even by a newcomer to the subject; the 320 illustrations by Mark Myers are helpful. An index and bibliography are included. The book is published in the U. S. and Canada by Naval Institute Press, Annapolis, MD 21402; the price is \$39.95.

### Avro Arrow

The CF-105, the Avro Arrow, was developed in Canada during the 1950s as a supersonic delta-winged air defense fighter. The first of six prototypes flew on March 25, 1958; the project was canceled for reasons involving the Canadian national budget on February 20, 1959. All of the aircraft were scrapped soon thereafter.

This handsome 176-page, 8½" x 11", hard-cover book with 164 photos (41 in color) and 50 drawings was compiled by Les Wilkinson, Don Watson, Ron Page, and Richard Organ; it tells the story of the Arrow project from mock-ups through flight tests. The



photos and drawings (including cockpit interiors) provide ample information for anyone interested in modeling this plane.

The book is published by The Boston Mills Press, 98 Main Street, Erin, ON, Canada NOB 1T0; the price is Can\$27.95 (approximately \$20.50).



### Fliegertruppe, 1914-1918

This 50-page, 8½" x 11", soft-cover book by A. E. Ferko describes operations by various units of the German air force (Fliegertruppe) in World War One. There are 85 black-and-white photos, most of aircraft, pilots, and observers, all taken from 1914 to 1918. The photos are clearly printed; they show many details of airplanes and uniforms.

The book is available from the author at P. O. Box 634, Salem, OH 44460, for \$5.50 per copy plus \$1.00 for third class or \$1.50 for first class postage. No copies will be sold to residents of Ohio.



### Illustrated BMW BUYER'S GUIDE

Ken Gross



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Recent additions to the Illustrated Buyer's Guide series of books for auto restorers and collectors are Michael Antonick's volume on the Chevrolet Camaro from 1967 through 1985 and Ken Gross' work on BMWs from 1952 through 1982. Each is a soft-cover book measuring 7½" x 9½"; the BMW volume has 176 pages, the Camaro has 158, and each contains approximately 200 black-and-white photos, many of which are close-ups of interiors, engine compartments, and external trim. Each contains a list of enthusiast clubs and a bibliography.

The books are published by Motorbooks International; each is \$13.95.



Yue Fei (1103-41AD) was the army commander in Song Dynasty, who fought against the Nuzhen. The model is 110mm in scale and consisted of 30 parts. Painting guide and brief history is included. Price is \$39.50 each.

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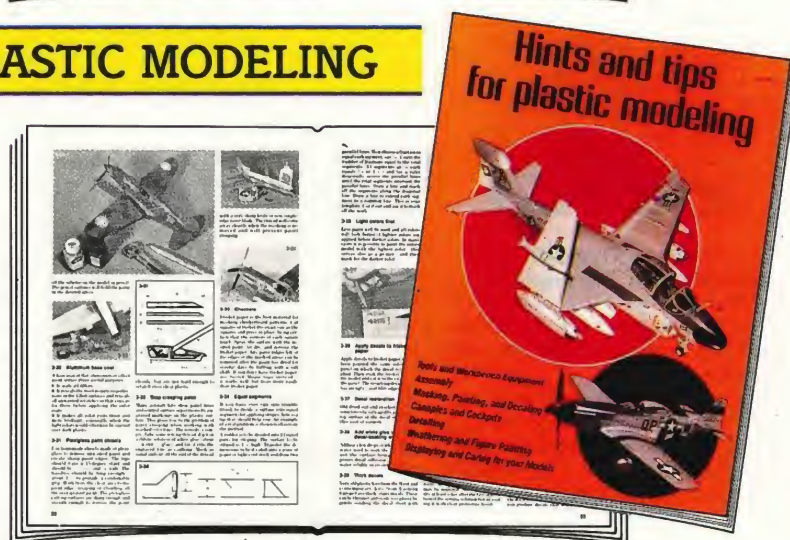
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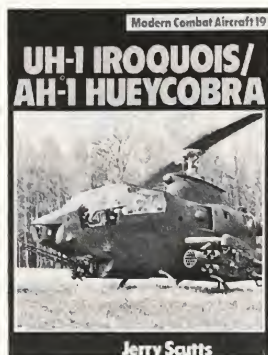


### Paddle Wheel Steamers and their Giant Engines

This 48-page, 8½" x 11", soft-cover book by Bob Whittier contains 21 black-and-white photos, 15 machinery drawings, and 36 sketches and engravings from old books. It tells the story of American paddle wheel steamboats (primarily on eastern rivers and lakes) from about 1815 through 1953 that were powered by single-cylinder walking beam engines, some with a bore of 110 inches and a stroke of 15 feet. (A walking beam is "an oscillating lever that pivots on a central axis and serves for transmitting power in such a way as to produce a reciprocating or reversible motion.")

There are chapters on the origin and development of walking beam engines, on how the engines were operated, and how steamers were designed to accommodate the engines.

The book is available from Seamaster Boats, Inc., Book Division, P. O. Drawer T, Duxbury, MA 02331; the price is \$7.95 plus 75 cents postage.



### UH-1 Iroquois/AH-1 Hueycobra

A recent addition to the Modern Combat Aircraft line of books published in England by Ian Allan Ltd., this 123-page, 7" x 9¼", hard-cover study by Jerry Scutts of the Bell UH-1 and AH-1 series of helicopters contains 135 photos (12 in color) and 5 drawings. The text discusses the development and deployment of these turbine-powered choppers, particularly in Vietnam by U. S. forces, but also throughout the world.

Other volumes in the series cover the BAC Lightning, B-52 Stratofortress, Buccaneer, C-130 Hercules, F-4 Phantom, F-14 Tomcat, F-15 Eagle, F-16 Fighting Falcon, F-104 Starfighter, F-105 Thunderchief, F-111, Harrier, Hawker Hunter, Panavia Tornado, SEPECAT Jaguar, V-Bombers, and Westland Sea King.

The books are distributed in the U. S. by Motorbooks International; the Huey volume is \$14.95.

## VIDEOTAPE BRIEFS



BY BURR ANGLE

### Target for Today

Produced for the American public by the U. S. Army during WWII, this 92-minute black-and-white film shows the Eighth Air Force carrying out a single day's bombing raids on German and German-occupied targets at Anklam, Marienberg, Danzig, and Gdynia. It first describes preparations for the raids by commanders, meteorologists, photo interpreters and map makers, aircraft mechanics, and other ground personnel.

The planes, primarily B-17s, are then shown taking off, forming up, flying to and bombing their targets, and returning to base. There is much combat footage showing German fighters being shot down by bomber gunners and several scenes in which B-17s are destroyed. The raids are said to be examples of daylight precision bombing.

The camera work, editing, narration, and other aspects of the film's production are excellent. It is now available as a videocassette in VHS or Beta format for \$69.95 from Historic Aviation, 3850 Coronation Road, Eagan, MN 55122.

### Flying the B-17

This videotape is a collection of three black-and-white pilot training films, each approximately 30 minutes long, produced by the Army Air Forces and Boeing Aircraft Company during WWII. Each film concentrates on some aspect of flying the B-17.

The first emphasizes correct use of checklists and standard procedures before, during, and after flight — one point made especially forcefully is the fact that a B-17 requires 20 to 30 mph less speed for takeoff with its tail down in the three-point attitude than with the tail up and parallel to the ground.

The second film deals with emergency operations, including engine fires, short-field takeoffs and landings, coping with a tail-heavy plane, and recovering from a stall.

The third, which is primarily an animated cartoon, describes the induction system, explaining how such items as the carburetor air filters, turbosupercharger, intercooler, carburetor, and exhaust waste gate work together to ensure an adequate supply of air and fuel to the engine at various speeds and altitudes.

The tape is available in either VHS or Beta format from Motorbooks International, P. O. Box 2, Rev., 729 Prospect Avenue, Osceola, WI 54020; the price is \$79.95.

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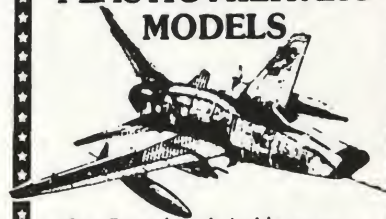
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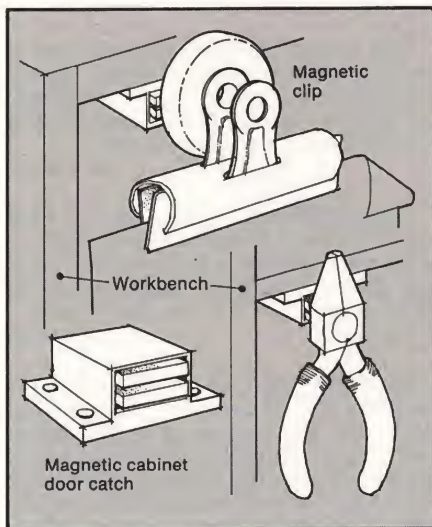


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## FSM TIPS AND TECHNIQUES

Would you like to share information on a useful tool or technique with other FSM readers? Send a brief description of the tool or technique and a black-and-white photo or a pencil sketch to FSM Tips, FINESCALE MODELER, 1027 North Seventh Street, Milwaukee, WI 53233. Please enclose a stamped, self-addressed envelope for return of photos. Tips are paid for upon publication.



**Magnets.** A neat and orderly work area is a great help in producing quality models. One way to help keep everything in its place is by using magnetic cabinet door catches as tool holders. They can also be combined with magnet-backed paper clips to hold plans, reference material, and so forth. Hardware stores and home centers stock good selections.

*Jack Clark*



**Model car seat belts.** I cut bookbinding repair tape into strips for seat belts in my 1/25 scale cars. It's textured, comes in many colors, and with wire or photoengraved buckles, looks realistic.

*Bill Gebhard*

**Cement brush.** I cut down the brush in Testor's Liquid Cement bottle to about half its original width. Now I have better control when applying the cement to small parts or restricted areas.

*Mark Savage*

**Final dusting.** To ensure there is no dust under the complicated paint scheme you are about to apply, blow it off with your airbrush. Make sure the color control tip is fully closed.

*P. F. Eng*

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**Manicure kit.** So you got a manicure kit last Christmas and you're thinking about giving it to someone else next Christmas? Take another look — it's a modeler's tool kit! The toenail clippers can cut parts from

sprues, cuticle scrapers are putty spatulas, and you can always use the nail file, tweezers, and scissors.

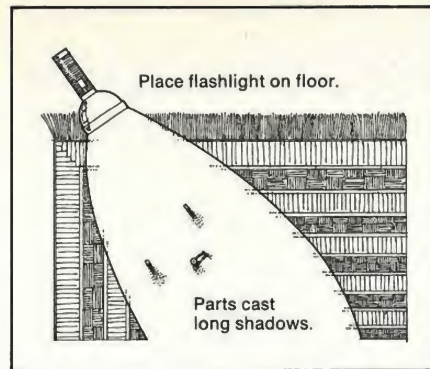
*Paul Boyer*

**Coloring water-base paints.** Do you have a water-base color that isn't quite the shade you want? Try adding a little food coloring. It makes light colors darker without making them look dirty as black paint sometimes does.

*Eric Wagner*

**Pastel applicator.** I cut down a round, stiff-bristled brush to use as a pastel applicator. The short, rounded profile allows me to stipple the pastel chalk dust onto the model with pleasing results. I cut down 0, 1, and 2 size brushes for my 1/72 scale models.

*Will Reynolds*



**Part search.** Dropped a tiny gray part on the gray floor? You might search forever, but there's an easier way. Place a flashlight on the floor. The elongated shadow cast by the tiny part makes it easy to spot.

*Jack Clark*

**Paper polisher.** I find repeated wet sanding to eliminate minor scratches to be a tedious chore. Instead, a few seconds of vigorous polishing with a coarse, high-fiber-content paper towel (I use Hi-Dri) does a great job.

*Don Frankfort*

**Snow job.** About six years ago I discovered Sno-Flok, a spray-on Christmas snow decoration manufactured by Essex Corporation, Orange, CT 06477. You should be able to find it in department stores at Christmas-time. Sno-Flok is a flaky, crystalline powder that comes with a vacuum cleaner attachment for spraying. It doesn't yellow and can

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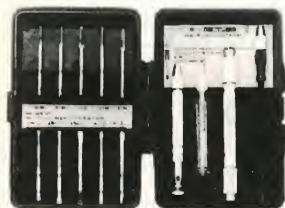
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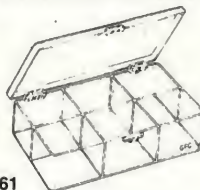
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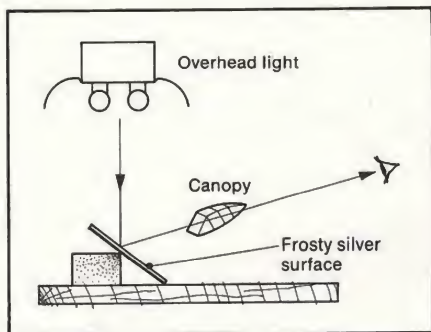
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be applied in any accumulation from a dusting to deep drifts. It has a luster of its own and needs nothing over it to make it glimmer. I apply Sno-Flok with a dilute solution of white glue. It packs well for tire tracks and footprints. *Ben Sharp*

**Painting canopies I.** I paint canopy framing by hand with a fine brush. I find it easier to see the framing of the clear parts if I paint against a contrasting background — I paint a light-colored frame against a dark background and vice versa. To avoid distortion, tape or tack light or dark paper inside the canopy. *Will Reynolds*



**Painting canopies II.** The sketch shows my method for illuminating clear canopies to make them easier to paint. I use a frosty silver surface, found on some greeting cards and TV dinner trays. The light from above reflects off the silver surface, sharply defining the canopy framing lines. *Ed Kolbush*



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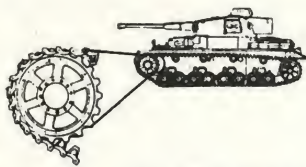
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**Leather effect.** To get a leather effect on auto upholstery and motorcycle seats, I spray flat paints, setting the airbrush to produce a slight orange-peel effect. Then, after letting the paint dry at least 24 hours, I rub the paint with my fingers. The oil from my skin and the rubbing action on the flat paint produce a realistic leather look.

*Tom Knapp*

**Plastic foam.** Plastic foam used as packaging material comes in handy for a number of things. I use it as a miniature drying rack and a brush holder. First, I poke holes into a flat piece of plastic foam, 8" x 10" x 1". Then I mount small parts on heated pins or toothpicks with double-sided tape. After painting, I simply place the pins and toothpicks into the holes in the foam.

Larger holes can accommodate paintbrush handles, keeping the tips up in the air, safe from being crunched or bent in a drawer.

*Bill Wells*



**Wing clamp.** I use pliers with plastic-coated handles to squeeze wing halves together while the glue is setting. No, don't use the business end because you'll ruin the surface of the model. Use the *inside* of the handles where the plastic coating can apply gentle pressure without marring the parts.

*D. H. Minton*



**Water, water everywhere.** I use Elmer's Tub & Tile Caulking for water on my ship diorama bases. It squirts from a tube like toothpaste and can be spread into wave patterns with a wet finger. After it dries (about 24 hours), it can be painted blue-green and accented with white. Cover the paint with a coat of clear gloss varnish to give the waves a wet look.

*Ed Wojcik*

**Airbrush cleaner.** Methyl ethyl ketone (MEK) is an excellent cleaner for airbrush parts (as well as a plastic solvent). It easily dissolves lacquer residues as well as enamels. Be careful with the tiny rubber and plastic gaskets, though. A quick swish in MEK is all you need; if left to soak in the solvent, these gaskets will swell or dissolve.

I also use an old electric razor cleaning brush to clean out the needle valve and tip.

*William R. Downing, Jr.*

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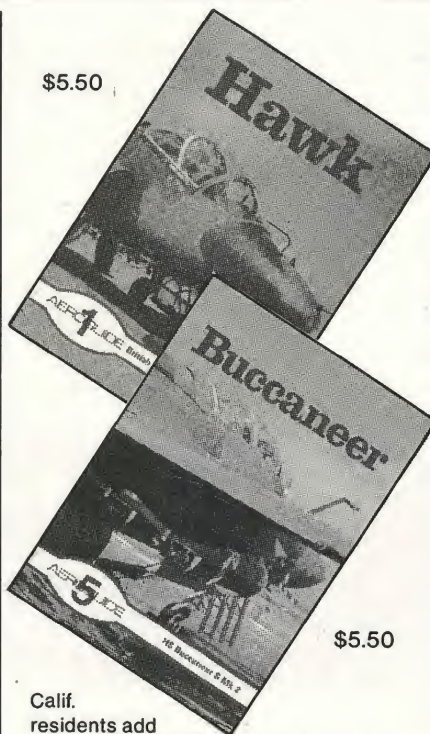
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Touch thin-paint-filled brush to outside edge of rim.



Wheel cross section

**Painting wheels.** Tires on wheels that have a raised rim edge are easy to paint using a fine-tip brush filled with thin dark gray flat enamel. Just touch the brush to the outside edge of the rim. The thin paint will flow around the rim. The rest of the tire is easy to paint.

*John Voelker*

**Paint stripper.** I found a safe and effective way to remove flat paint from plastic models. I mix two to three cups of trisodium phosphate (TSP) to a gallon of hot tap water and add one cup of bleach and a small bottle of "409" household cleaner. I soak the parts overnight, then make a paste of TSP and hot water and scrub it onto the plastic with an old toothbrush. Although this is easier on skin than oven cleaners, I still recommend rubber gloves and eye protection.

*Fred Meccia*

**Aligning with gravity.** While building some ship models recently, a problem arose trying to keep the many stacks, booms, masts, and ventilators truly vertical. I solved the problem by simply attaching all these with slow-setting tube cement. Before the glue had set, I turned the model upside down in a makeshift jig and allowed gravity to align the parts. Make sure that the model is level in each axis while on its back.

*Ed Kolbush*

**Saving space.** If you buy more kits than you have room to store, try removing all the kit parts from sprues (except for the tiniest) and place them in Zip-Lock food storage bags. Several kits can be stored this way in a single kit box, or you can store dozens in a small carton. Keep instruction sheets and decals flat in another box or loose-leaf binder.

*Ed Kolbush*



**Color finder.** If you keep your paint in a drawer and are tired of picking up every bottle to find the one you are looking for, here's an answer. Write each color's name and number on 3/4" round stick-on labels and put one on top of each bottle cap.

*Paul Frederick*



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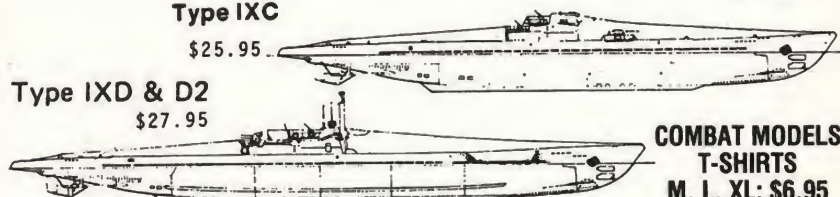
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**Ceramic paints.** Try using ceramic bisque stains on plastic models. They are water-base paints and cover well with little thinning. They can even be airbrushed and cost about 70 cents a bottle. Any mistakes can be washed off with soapy water.

*George Giroux*

**Painting over chrome.** Chrome parts can be prepared for painting by soaking them in Scalecoat Wash Away Paint Remover (177 Wheatley Avenue, Northumberland, PA 17857). This chemical allows paint to adhere to the plastic.

*Kay Sakamoto*

**Realistic headrests.** For headrest padding in small-scale aircraft models, try

laminating three or four layers of masking tape and cutting to the proper shape. Then paint the non-sticky side black or leather color and apply it to the seat back or armor plate.

*Will Reynolds*

**Puddles.** After the diorama groundwork is finished, mix one part gloss black with four parts of clear gloss lacquer. Let this mixture drip from a brush onto the ground where you want puddles.

*Jacob Livshutz*

**Paint mixing agitators.** Mixing paint doesn't have to be the wrist ache it usually is. By adding several BBs to a bottle or tin, you won't have to shake it as long.

*William Hogan*



**Part holder.** A draftsman's lead holder can hold propellers, landing gear struts, control sticks, and other small parts for painting. A push on the end of the shaft releases the chuck which can hold a rod up to  $\frac{3}{16}$ " in diameter.

*John Merz*

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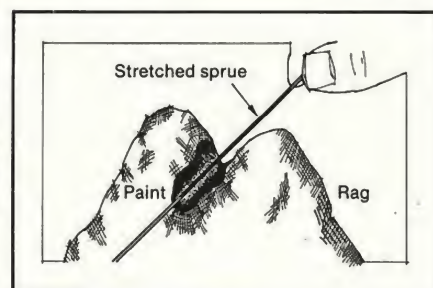
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*Paul Frederick*

**Mixing bowl.** Don't throw out those plastic soft margarine tubs — they're ideal for mixing water-base paints. Place the paint container on the raised center portion of the tub and add enough water to form a shallow moat around it. This way, both paint and thinner are out of the way of your project.

*John Staehle*

**New drawing compass.** Brookstone Company, 127 Vose Farm Road, Peterborough, NH 03458, sells a compass-like instrument (No. G-10288) that accepts drawing tools up to  $\frac{1}{2}$ " in diameter — that includes a No. 1 X-acto knife handle or swivel knife. It works great for cutting circular stencils in frisket

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William Hogan

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Brian Slipper

**Easy graffiti.** Typewriter correction paper makes realistic chalk graffiti. Tape a small



section of correction paper to the tank, bomb, or wall, and write your message with the blunt end of a needle or a sharp pencil. After removing the paper, spray on a coat of clear finish to seal the message on the model.

Walt Walko

**Final wash.** Even better than washing model parts with soapy water is a bath with ordinary rubbing alcohol. Scrub all parts and subassemblies before painting them to remove release agent, oily fingerprints, dust, and dirt. Rubbing alcohol dries quickly and doesn't harm plastic.

James Valent

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#### EVENTS

**On-Con 1 Model Contest, September 7, 1985,** Hampton Court, London, Ontario, Canada. Hosts are the London Plastic Modelers Society. IPMS rules in effect. For information contact John Magierowski, 764 Strand, London, Ont., Canada, N5Y 1S9.

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# THE PERFECT FINISH

This formulation allows the builder to create deep, rich, lustrous finishes. Two or three color coats followed by a couple of high-gloss clear coats produce results that are no less than spectacular!

The colors were selected after Testor designers carefully scanned auto manufacturers color chip books from around the world, and located the most popular, up-to-date paint schemes. Engine enamels, primers, clear gloss, and detailing colors like Turn Signal Amber have been included also.

## It's easy too!

In the past, hobbyists attempting to create accurately finished automobiles were forced to use expensive, full-scale auto lacquers and bothersome surface prep procedures. (Lacquers tend to craze polystyrene, hence the need for careful priming.)

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Model Master auto paints are unique because they are semi-transparent metallic pearlescents.

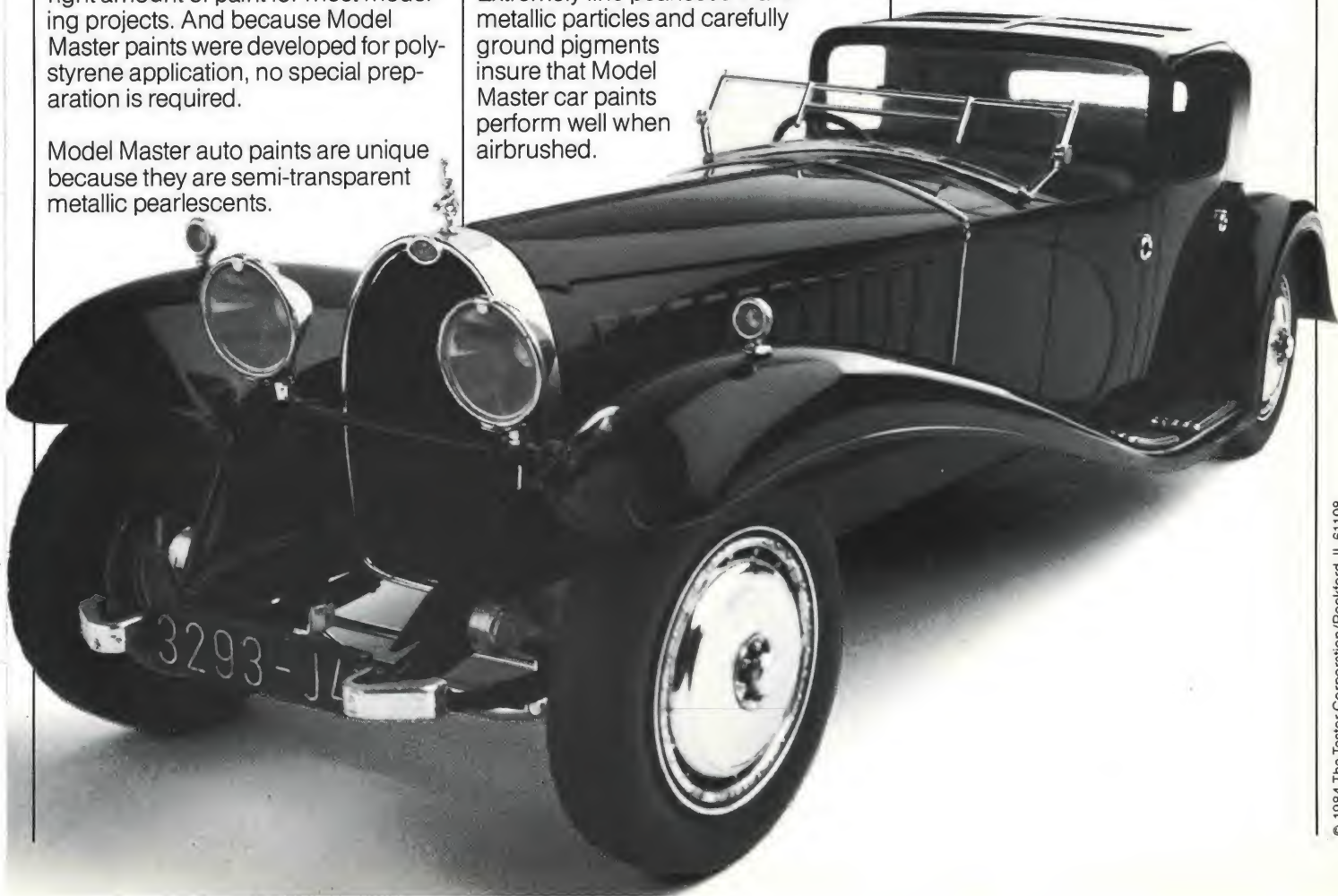
What's more, by experimenting with primers, the builder can develop custom finishes. For matching standard colors, Testor suggests two color coats over gray primer. By using gold or silver primer, for example, and varying the number of color applications, truly original finish work can be achieved.

Like other Testor and Model Master coatings, these new colors are recommended for airbrush application. Extremely fine pearlescent and metallic particles and carefully ground pigments insure that Model Master car paints perform well when airbrushed.

## Introducing Model Master Professional Paints for Model Cars and Trucks.



In addition, the Model Master finishing system includes precision tools. Natural fiber brushes from 000 to 1/2", sanding films, cementing tips, and No. 11 refill blades all reflect the high standards set by Model Master paints.





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